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MOTOR OWNER

JANUARY
1921

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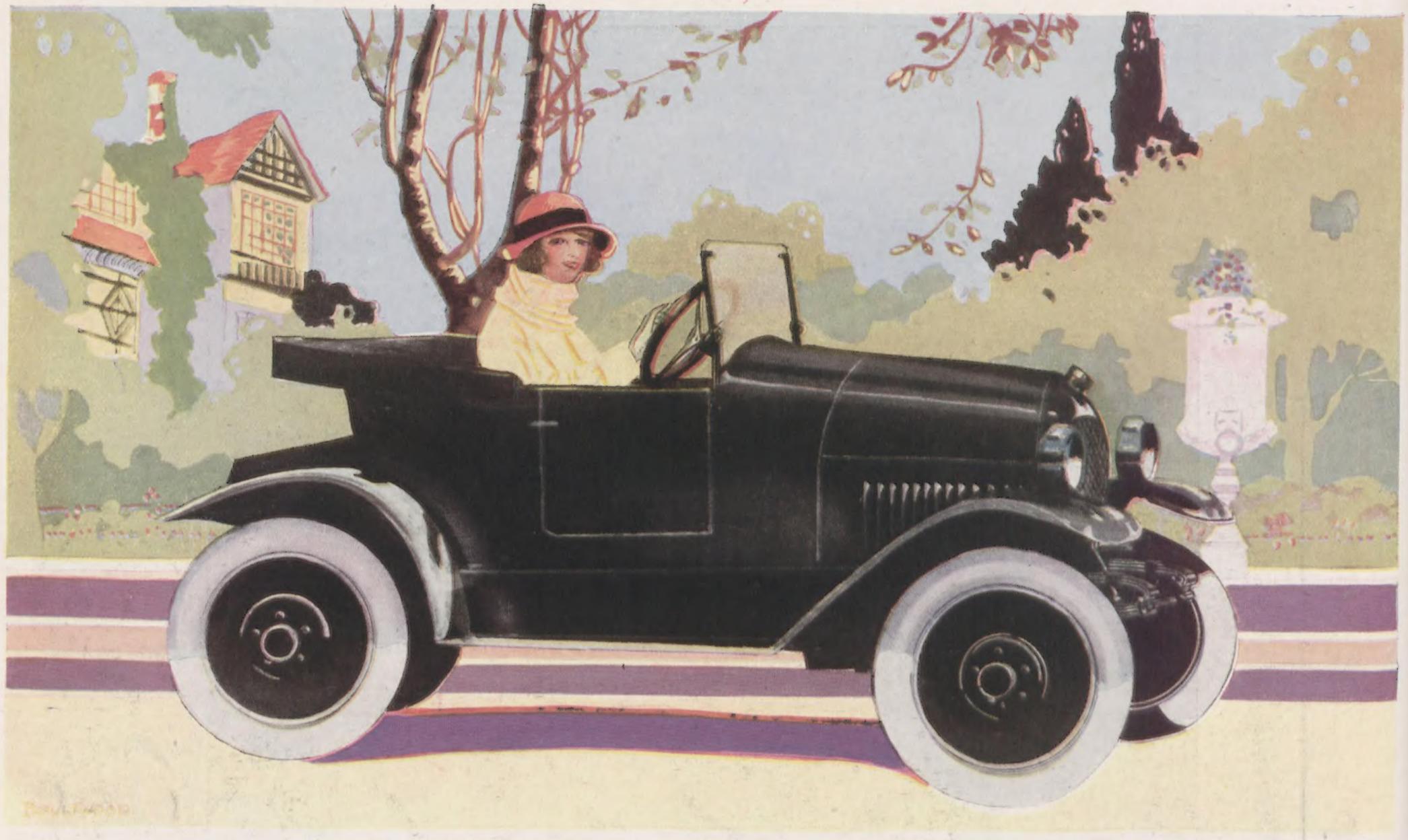
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THE B.F. GOODRICH CO. LTD., 117-123 Golden Lane, London, E.C. 1

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ENGINE : 8-10 h.p. V Twin Deeply Finned, Air-cooled by fan, 85 mm, 89 mm, c.c. 1000. High-tension Bosch Magneto.

CLUTCH : Dry Plate, no lubrication required.

PROPELLER SHAFT : Enclosed.

GEARS : 3 Speeds forward and reverse (patented), Gate change. Internal expanding brakes. Hood, Screen, Spare wheel. Weight 8 cwt., 45-50 m.p.h., 50 m.p.g. Approx. price £285. No belts, no chains. Acknowledged one of the finest Light Cars on the market.

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LARGE STOCK OF SPARE PARTS

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FOR ECONOMY, SPEED AND COMFORT IT IS SECOND TO NONE

1921 MODELS

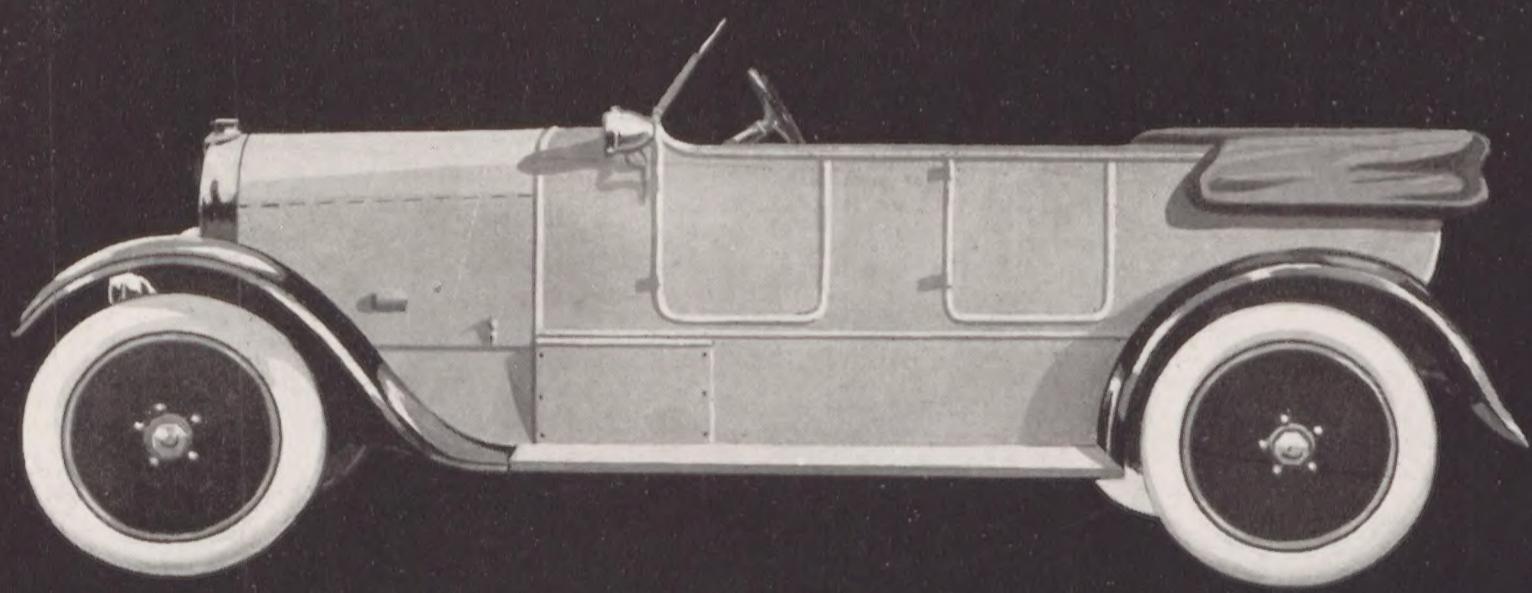
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ORDER EARLY

THE RIGHT CAR AT THE RIGHT PRICE



The
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£442
Complete

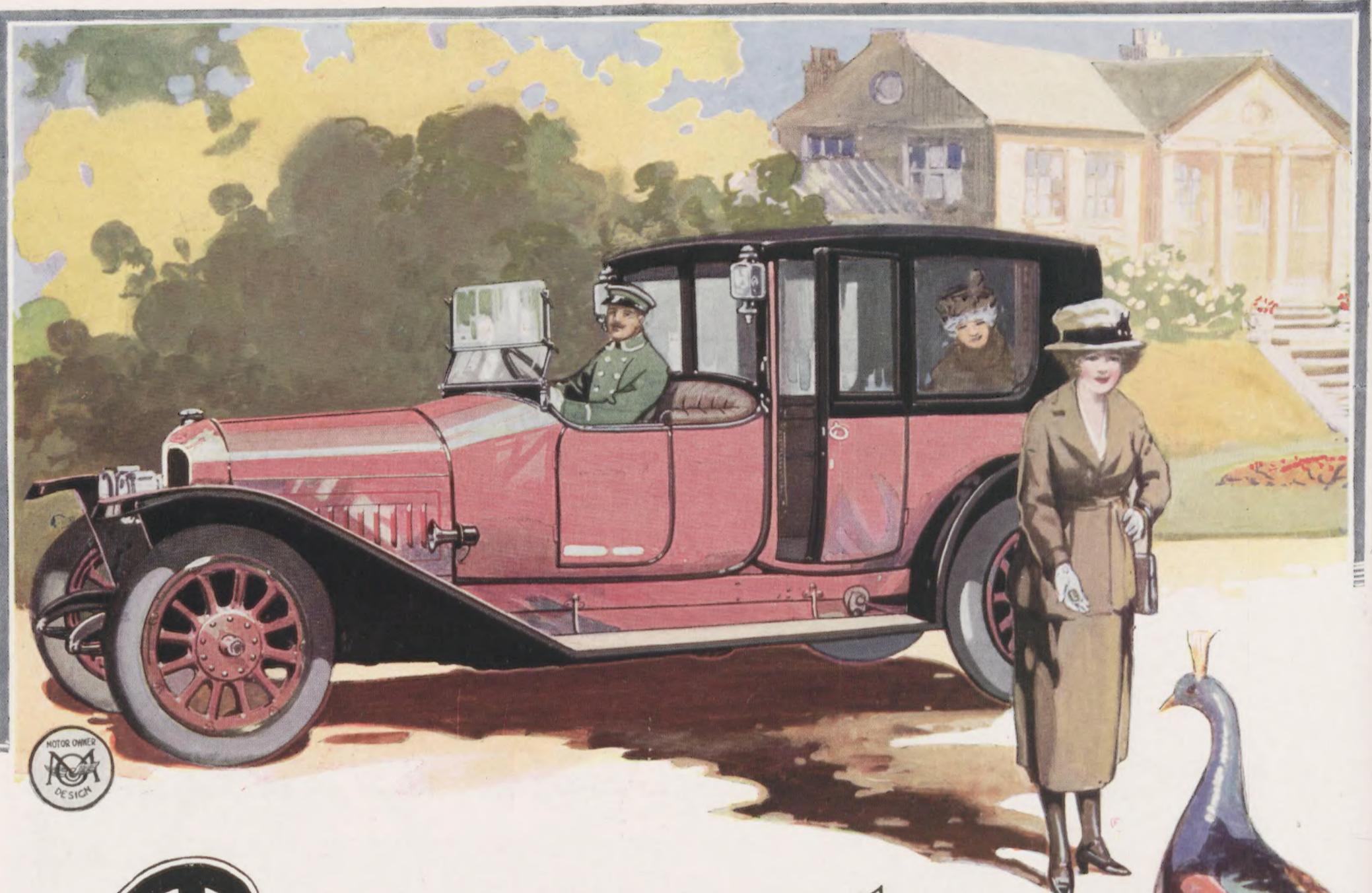


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Peugeot

"The Car of old reputation"

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1921 MODELS

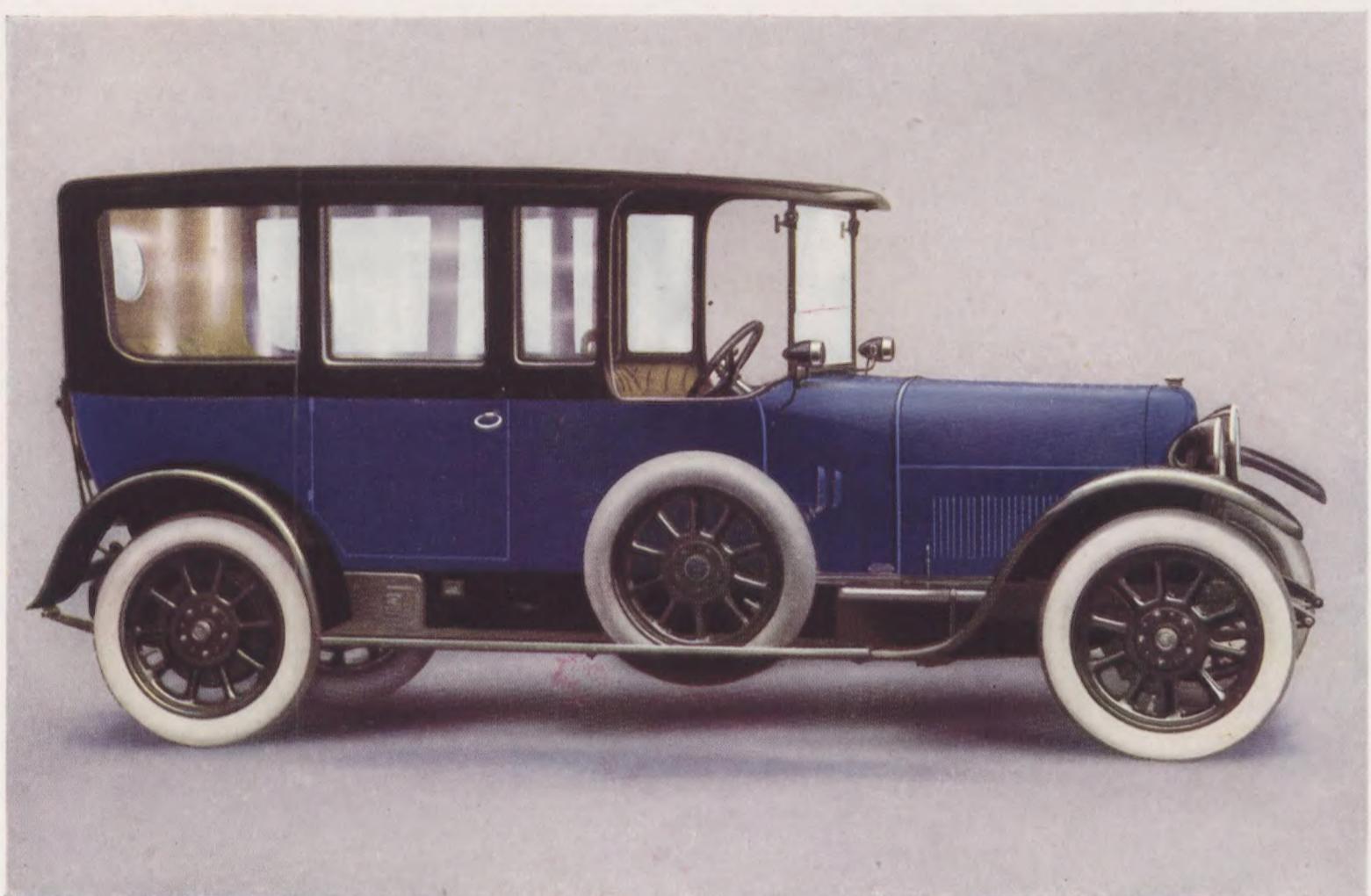
11 h.p. 4 cylinder 66 × 105

16 h.p. 4 cylinder 82 × 130

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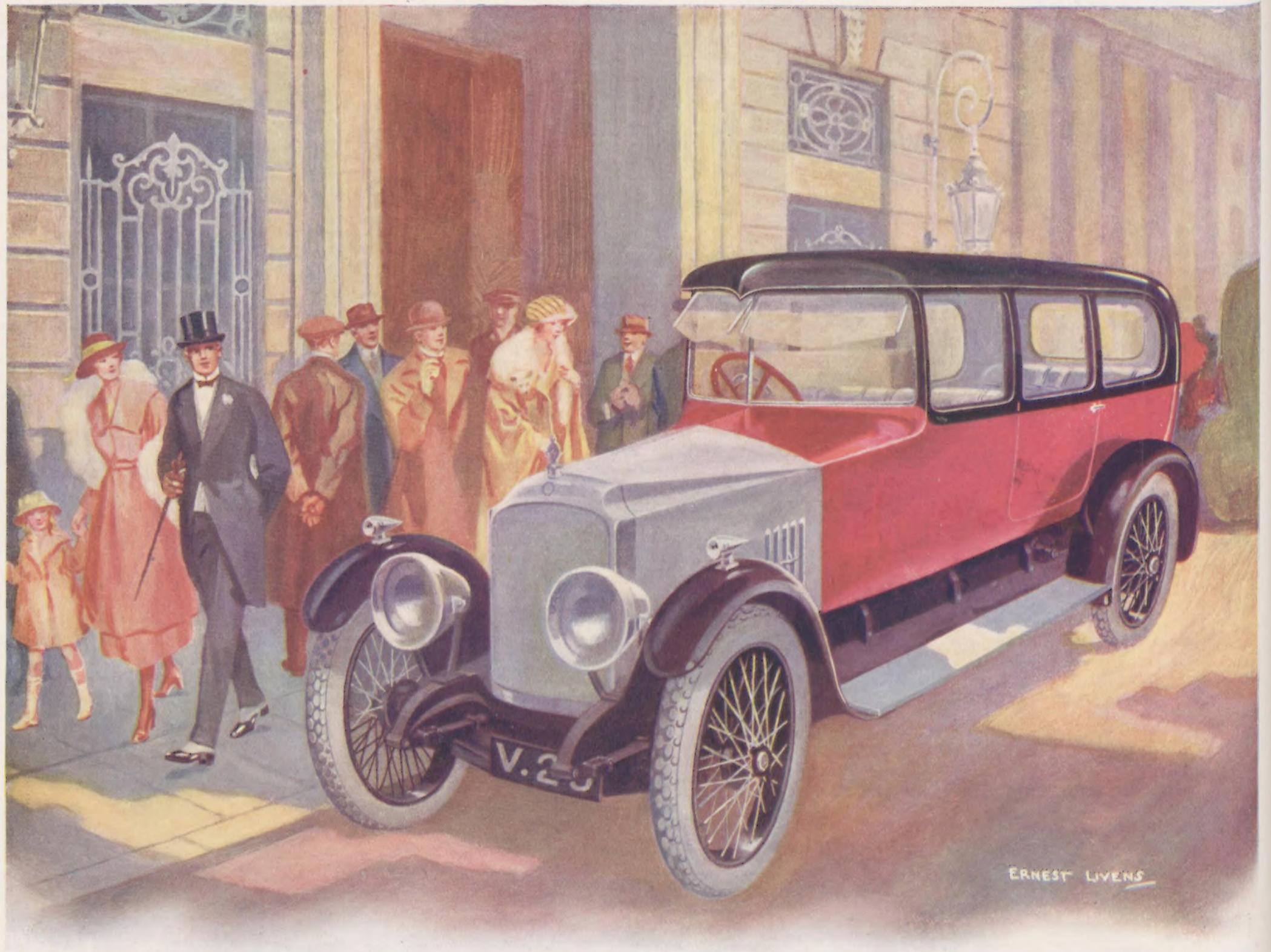


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An exceptional production in motor carriages

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Prospective buyers of best-class cars are invited to send for our catalogue giving full particulars of the two Vauxhall types—25 h.p. and 30-98 h.p. (sporting).

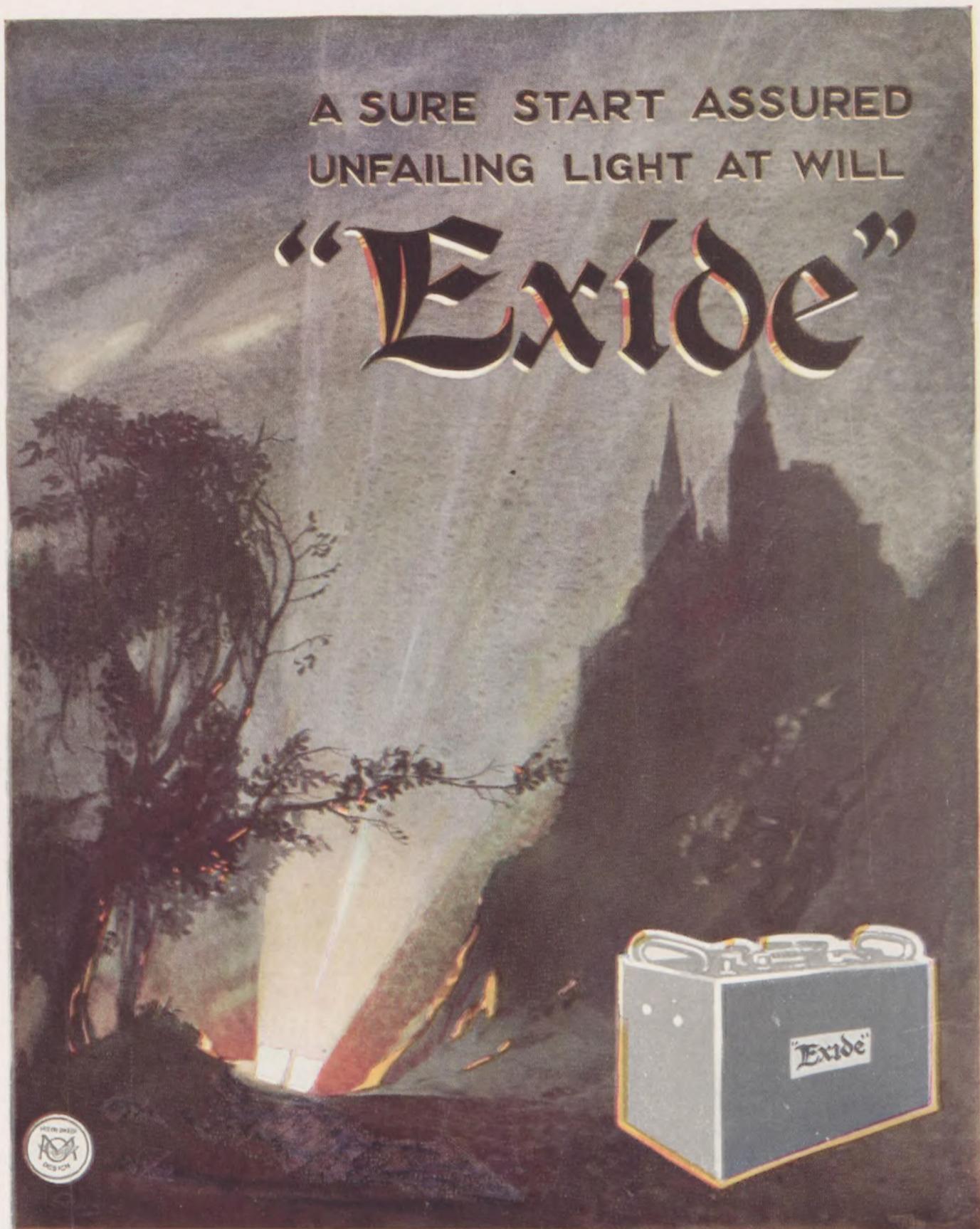
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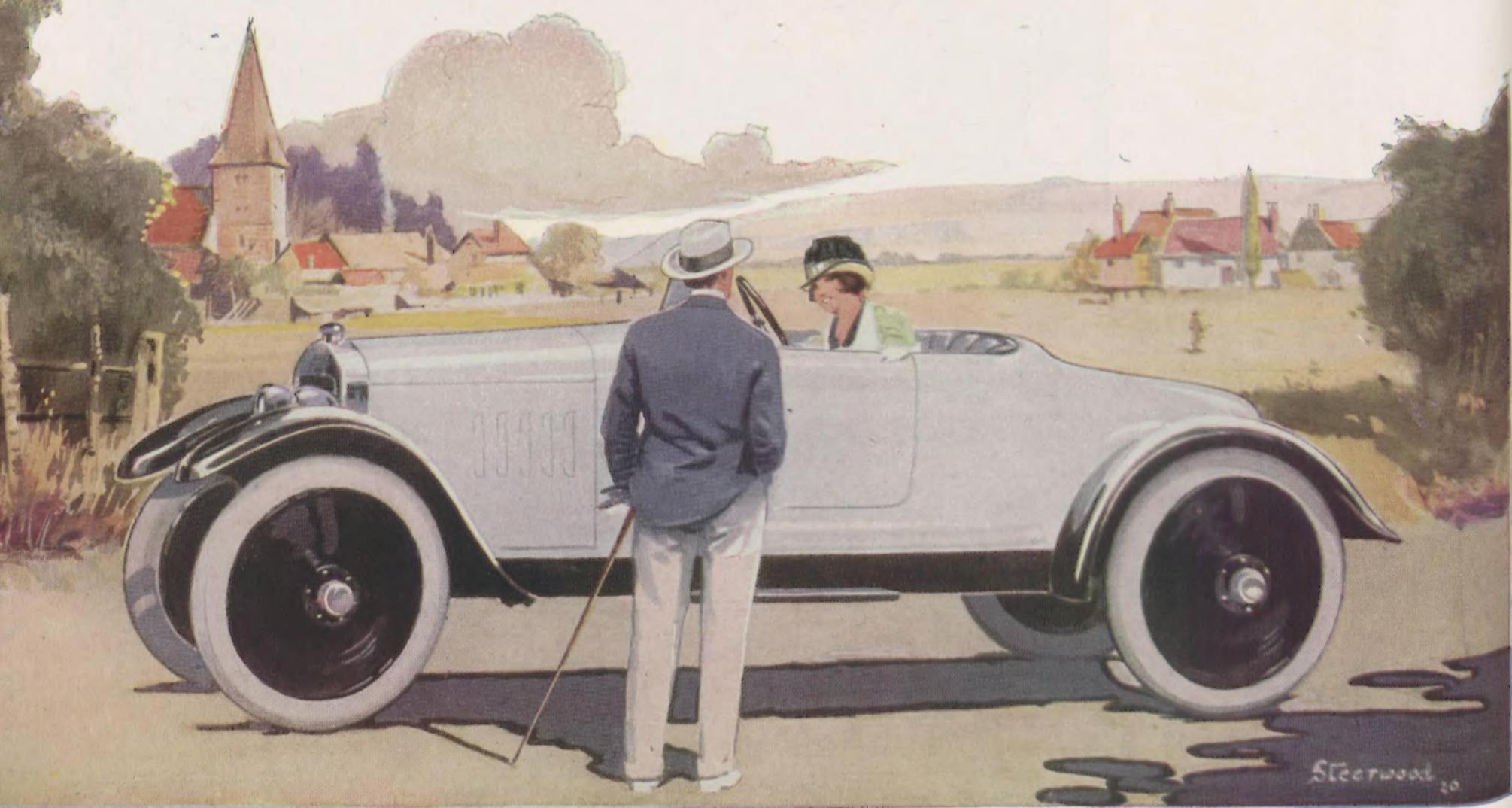


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3-Speeds Self-starter
Electric Lighting
Detachable Disc Wheels

Price ready for the road :
2-Seated Car complete

£550

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AN EQUIPMENT WITHOUT RIVAL

DELIVERY
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DELIVERY
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SMITH'S STARTING AND LIGHTING SYSTEM

12 VOLT LIGHTING & STARTING SET S.A.

Suitable for 15 h.p. car.

	£	s.	d.
12 volt. 4D Dynamo with pulley and bracket	13	15	0
Model 5S. Starter	15	15	0
Bezel Operated Switch De Luxe	5	5	0
Cutout	1	15	0
Starter Switch	1	5	0
Headlamps (pair) 7½" De Luxe	7	10	0
Side Lamps 4" De Luxe	3	5	0
Tail Lamp	1	7	6
12 volt 45 amp. Accumulator	9	10	0
IN BRASS FINISH	£59	7	6

Also supplied in Nickel, Black and Brass, or Black and Nickel. Extra, 5%.

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12 volt, 60 amp. Accumulator	11	10	0
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12 volt 33 amp. Accumulator	6	15	0
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Side Lamps 4"	3	5	0
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IN BRASS FINISH	£39	12	6

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6 VOLT LIGHTING SET S.D.

Suitable for Light Car.

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6 volt 6 D Dynamo with pulley	12	15	0
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Small "Baby" Side Lamps	1	15	0
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IN BLACK AND NICKEL £233 12 6

6 VOLT LIGHTING SET S.E.

For Cycle Cars.

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6 volt Dynamo with pulley	9	10	0
Cutout	1	15	0
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EXTRAS.

	£	s.	d.
Cables for Lamps, Dynamos, etc., according to set and type of car from	1	10	0
Whittle Belt	0	17	0
Fitting Materials Clips, Cleats, Screws, Insulating Tape, etc. From	1	5	0
Starter Gear Ring	7	10	0
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Ditto for Starting and Lighting Sets	12	0	0

If your particular requirements are not covered by the above sets, we shall be happy to quote you specially.

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179-185 Great Portland Street London W.1.
and at Birmingham, Manchester, Glasgow & Belfast.

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We are offering a maximum number of 2,000 Carburetters at a reduced price of £1 on each Carburetter manufactured from this date.

THE advantages of the ASMO Carburetter are readily appreciated by all Motorists of experience. The scientific design of the carburetter enables the engine, irrespective of fuel container position, to receive the correct amount of atomized fuel (whether Petrol, Benzole, or Alcohol) for all speeds, without the complications of the vacuum and pressure systems essential with any other carburetter.

By reason of its advanced design, the fitting of the Asmo ensures a more perfect atomization of fuel, thus enabling the utmost power to be obtained with the minimum fuel consumption from any type of Internal Combustion engine.

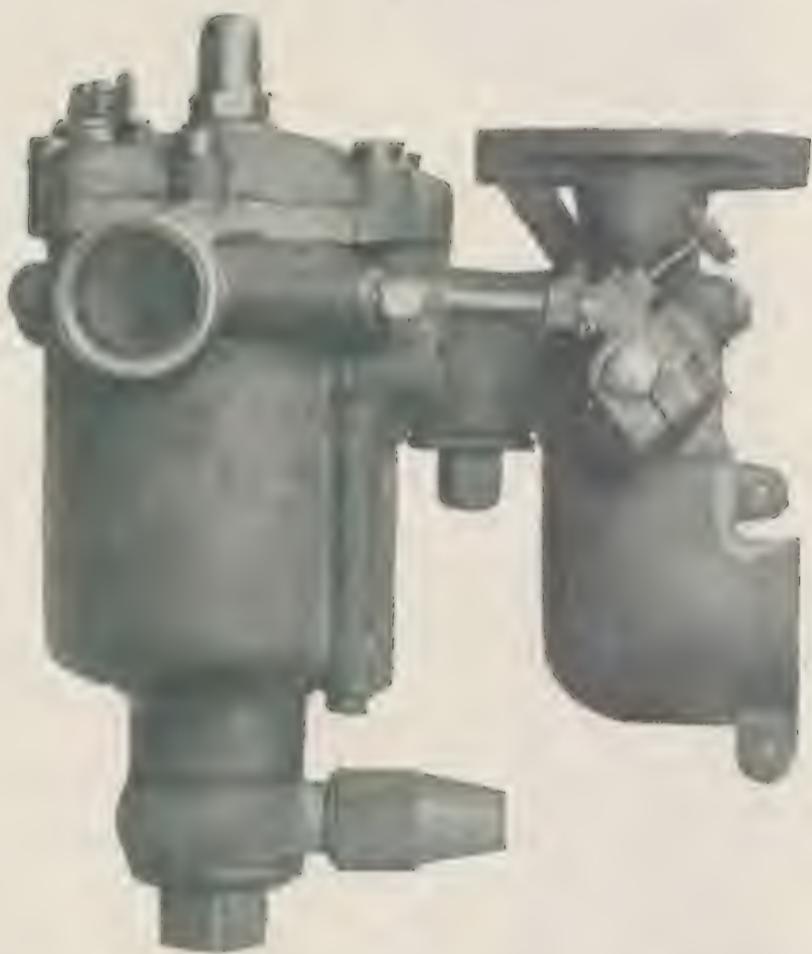
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"A Classic amongst Cars"

THERE is a special appeal in the CLASSIC CALCOTT to substantial well-to-do people who consider their comfort and appreciate "Quality." The CLASSIC CALCOTT is built for those people who are sure of themselves and their position, and who seek luxury in service as well as in appearance.

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Illustrated Catalogue sent upon request

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COVENTRY

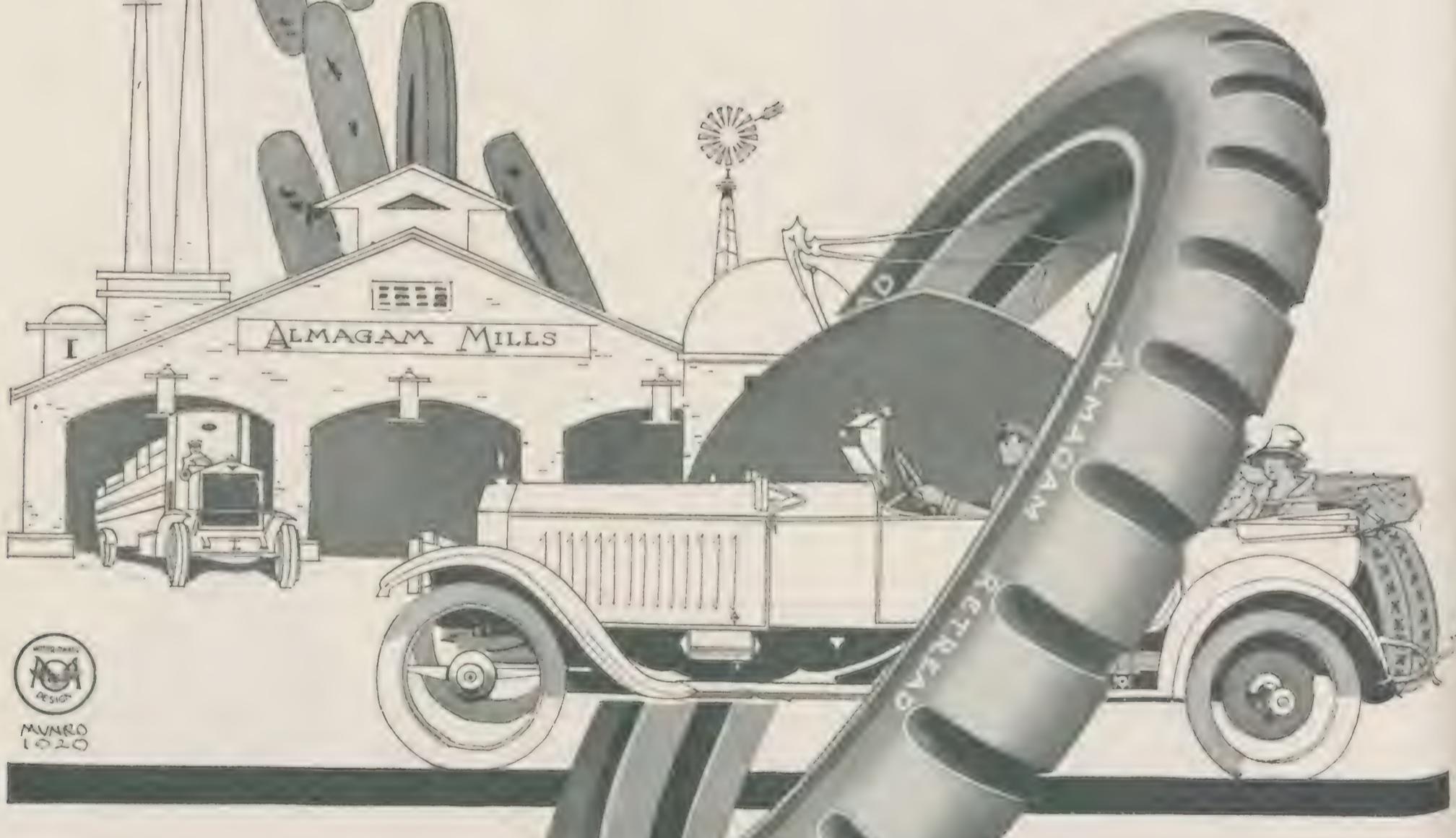
Established 1885

The
CLASSIC
CALCOTT



SPECIMEN PRICES:

700 × 80 - £1 · 8 · 9	815 × 105 - £2 · 19 · 2
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A recent testimonial—

Margate, 8/11/20

"I feel it is my duty to you to inform you of the wear I am having from one of your noted retreaded tyres. It has travelled over 6,000 miles and is quite safe for another two or three thousand."



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**YOUR
CAR IS
WORTHY
OF A
GOOD
GARAGE!**

B. & P. MOTOR HOUSE

Made in the following sizes

Depth	Width
15 ft.	× 18 ft.
18 ft.	× 18 ft.
20 ft.	× 18 ft.
24 ft.	× 18 ft.

Prices on Application



The illustration shows a B. & P. Motor House constructed of strong deal planed framing, mortised and tenoned, the walls covered outside with rustic joint weather-boarding and bottom portion stained with our brown wood preserving preparation. The upper portion is painted white and finished with half-timber overlays, and mouldings painted dark brown, the inside woodwork being oil stained. The doors are 8 feet high, framed and match-boarded, painted three coats, fitted with strong hinges and good locks. Windows glazed with 21 oz. sheet glass and fitted with butts and set-opes. Roof of Italian pattern iron, with felt and match-boarding for lining, barge boards as shown, cast-iron eaves-gutters and down-pipes.

Carriage paid to most stations in England and Wales.



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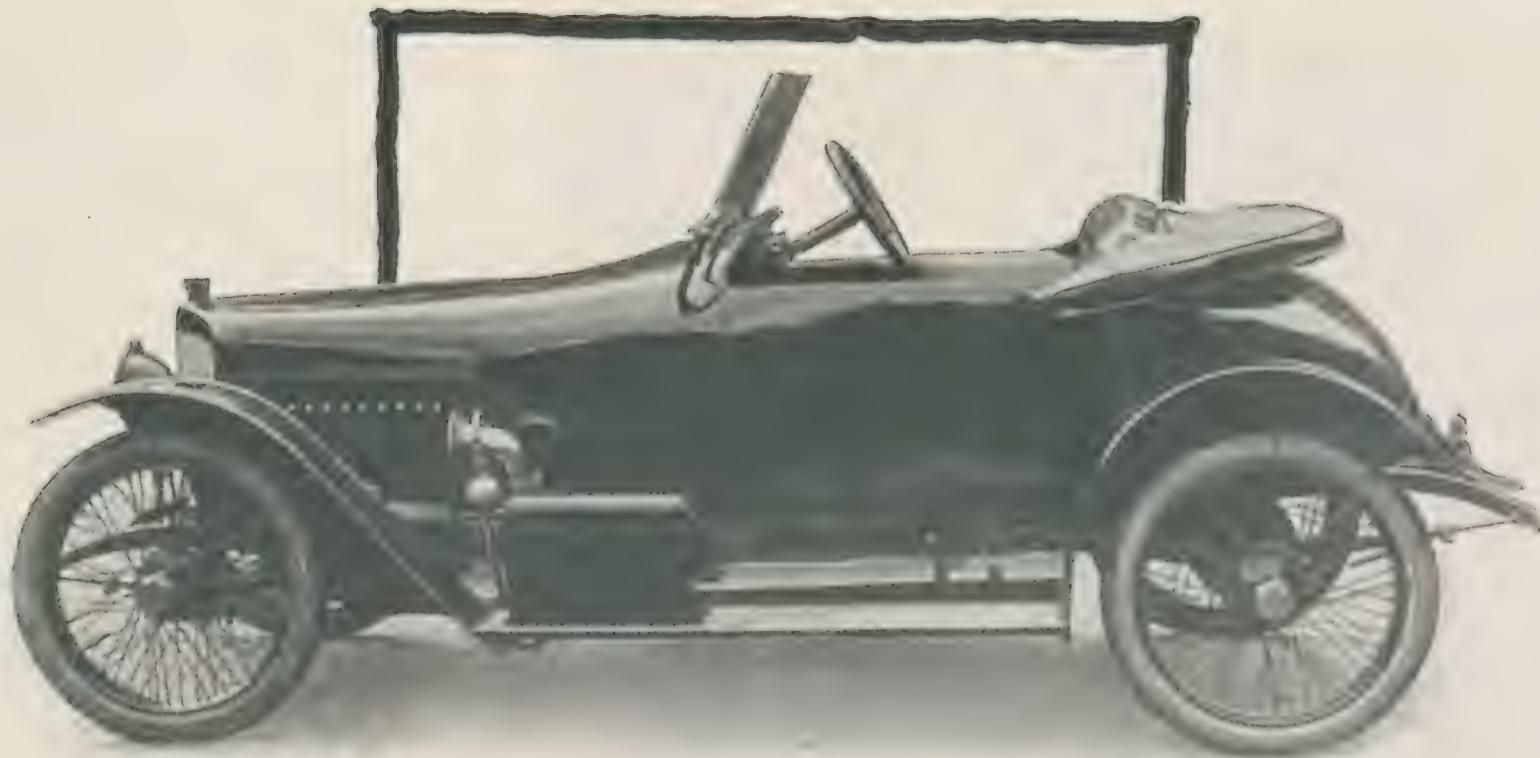
In addition to saving Garage charges, B. & P. Motor-Car Houses are thoroughly well-built. Made with selected timber by skilled workmen in our Norwich Factories. They are portable, easily erected by unskilled labour and are offered at prices within reach of all.

Enquiries invited for Garden Frames, Greenhouses, Conservatories, Verandahs, Poultry Houses, Kennels and Wood Buildings of every description. Also the Chaine-Helice Water Elevator and the "Electolite" Generating Set

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Or *WRITE* for fuller particulars to
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45 - M. P. H.

40 - M. P. G.

3 Speeds

Fitted with Self-Starter and
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Michelin Tyres

Bosch Magneto

Spare wheel and tyre

£500

OTHER MODELS

15·5 H.P. 2 Seater -

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SPECIAL SPORTING

20·1 H.P. 4 Seater - £1

ALL THE SAME SPECIFICATIONS
BUT HAVING FOUR SPEEDS

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BRITISH EAGLE MOTORS LTD
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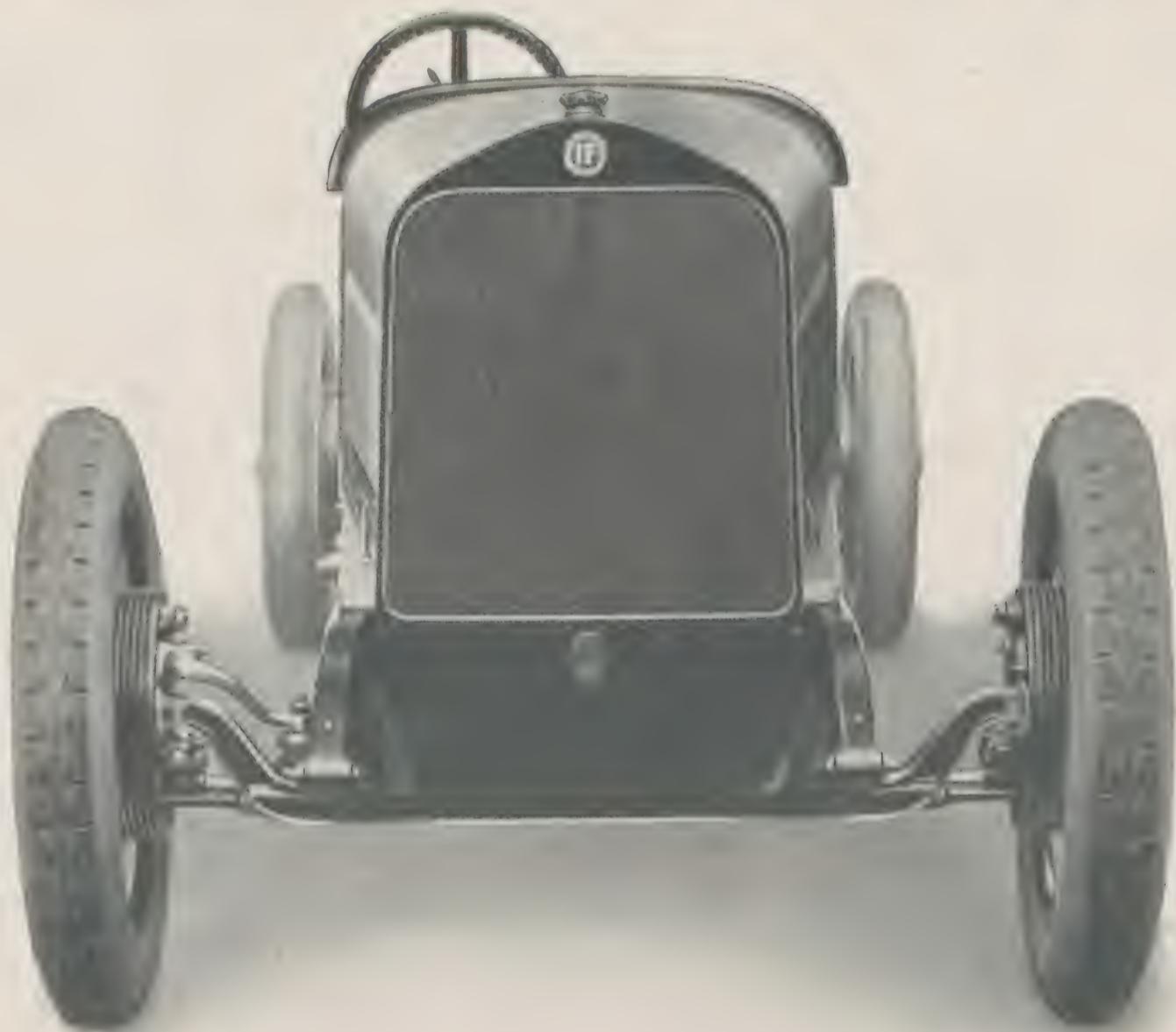
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WITH ALL GOOD WISHES FOR THE NEW
YEAR FROM THE SUN ENGRAVING COM-
PANY LIMITED · MILFORD HOUSE · MILFORD
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BLOCKS · · · REPRODUCTIONS BY PHOTOGRAVURE

THE LEADER OF LIGHT-WEIGHT CARS



The METEORITE 11·9 H.P.

IN POWER, sturdiness, riding comfort and economy the METEORITE surpasses any car in the light-weight class. In every detail of its construction, design, strength and the quality of its selected materials the METEORITE is a product of outstanding merit.

Although light in weight, the car holds to the road under all conditions. Its engine—the famous Coventry Simplex—possesses remarkable flexibility and develops extraordinary power. Easily does over 45 miles an hour and climbs any hill with a full load.

WILL DO AN AVERAGE OF 35 MILES PER GALLON.
Our catalogue illustrates and describes the various mechanical features of the car which distinguish it from all others. Send for it.

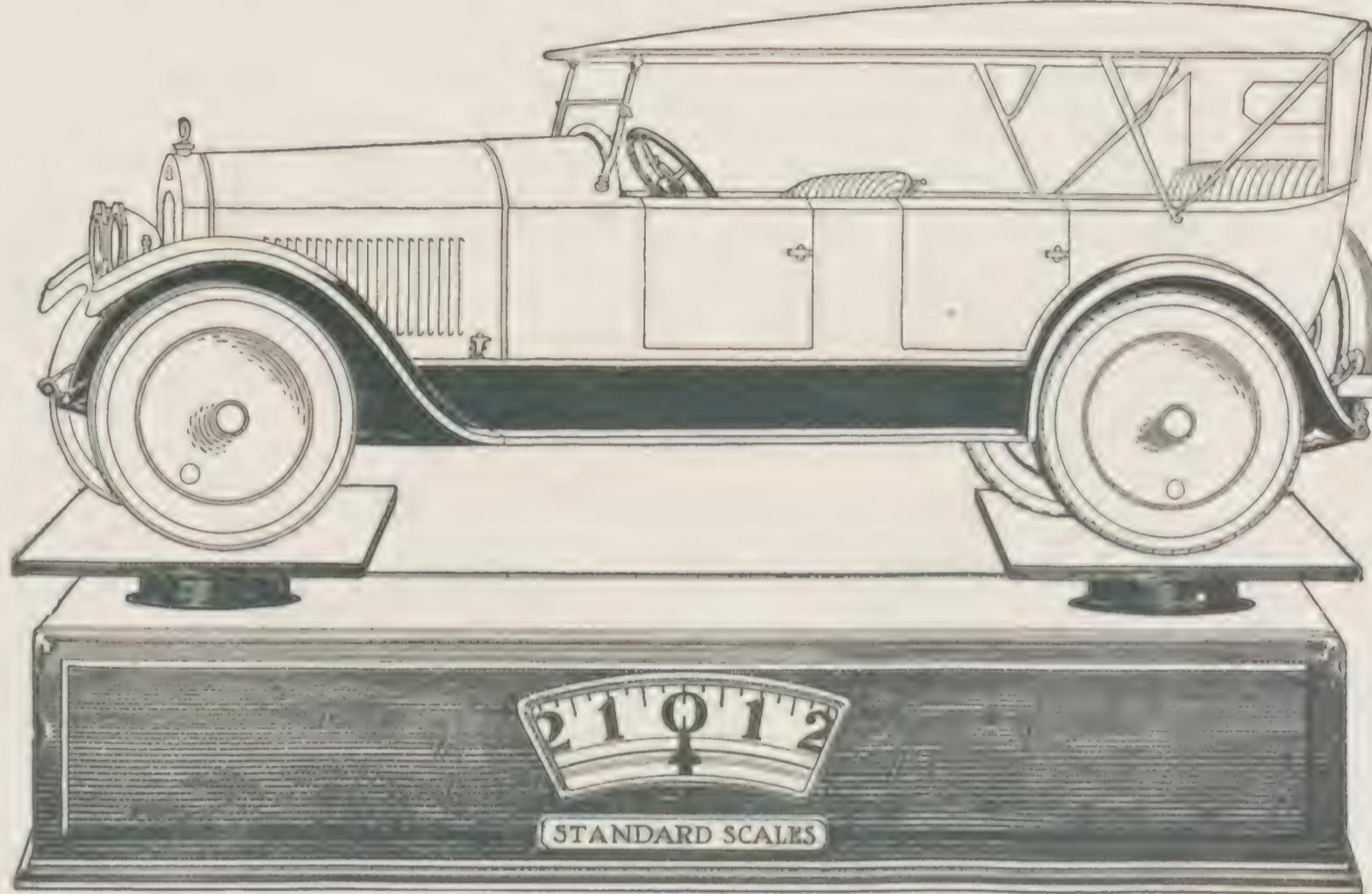
One of its many distinctive features are adjustable springs—adjustable to the three different types of body—so that on the roughest surface there is an entire absence of jolting.

THE PALL MALL MOTOR TRADING CO. LTD
(Sole Distributors) 45 PALL MALL, LONDON, S.W.1 Phone : Regent 499 (3 lines)

Paste A.C.T.

The Motor-Owner, January, 1921

There's a Touch of To-Morrow in all Cole does To-day



DO YOU KNOW WHAT WE MEAN WHEN WE SAY THE AERO-EIGHT IS BALANCED TO ZERO?

What gives the Cole Aero-Eight its 15,000 miles on tires and causes its 80 h.p. engine to require so little fuel?

Why does the Aero-Eight pick up so swiftly and have so great a fund of reserve power?

What vests it with its unusual range of performance and enables it to operate with uniform efficiency throughout its entire speed scope?

Why does the Aero-Eight adhere so tenaciously to its course under all conditions of travel and absorb the shocks

when the going is rough? What frees it from the usual ravages of time and wear and causes its performance from year to year to possess the same dependability?

There is one answer to all of these questions: the Cole Aero-Eight is balanced to zero!

That is one of the achievements of aerotype engineering—an exclusive characteristic of the Cole Aero-Eight which an hour in traffic or a mile on the road will reveal as one of the master features of automotive engineering.

Owners of Cole Aero-Eights have learned the significance of zero balance through the remarkable performance of their cars

COLE MOTOR CAR COMPANY

Export Office for Europe:

GOLDEN HOUSE, 29, Great Pulteney Street, LONDON, W.I. ENGLAND

Telephone: Gerrard 4461-4383.

Works: INDIANAPOLIS, U.S.A.

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The Acid Test

TRACK.
Speed
45.98 Miles
per hour.

ROAD.
Fuel
Consumption

76.65 Miles
per gallon.

Prices

Standard Two-Seater	£475
Sports Model	£575
Coupé Model	£635
Standard Four-Seater	£635



ROYAL AUTOMOBILE CLUB

CERTIFICATE OF PERFORMANCE No. 452.

(Under the Open Competition Rules of the R.A.C.)

A DEEMSTER CAR

19th—20th October, 1920.



This is to Certify that a 10 h.p. Deemster Light Car was entered for trial by Messrs. Ogston Motor Co. (1918), Ltd., of "Deemster" Works, Victoria Road, Acton, London, W.3.

DESCRIPTION OF CAR.

Chassis No.	- - - 959	Number of Cylinders	- 4
Engine No.	- - - 913	Type of Body	- - two-seater.
Bore	- - - 62 mm.	Gear ratios	- - top $4\frac{1}{2}$: 1.
Stroke	- - - 90 mm.	" "	- 2nd 8 : 1.
		" "	- 1st, $13\frac{1}{2}$: 1.
Engine revolutions per minute on top gear at 20 m.p.h.	- - - 1,081.84		
Weight of Vehicle, unladen	- - - - -	- - - - -	1,334 lbs. (11.9 cwt.)
Running weight, including passenger and driver	- - - - -	- - - - -	1,711 lbs. (15.28 cwt.)

DESCRIPTION OF TRIAL

The trial was a fuel-consumption test on one of the Club's Six Standard Routes, preceded by speed and hill-climbing tests upon Brooklands Track. The car was timed over one half-mile from a flying start, and the speed was found to be 45.98 miles per hour. Brooklands Test Hill was taken at a speed of 13.71 miles per hour. The car then, without any adjustment of carburettor or other alteration, ran from London to Beckhampton and back, a distance of 164½ miles. The road portion of the trial was covered at an average speed (running time only) of 20 miles per hour. The weather and roads were both good. The car "coasted" down hills, i.e., the clutch and gear were disengaged when descending hills. An extra air inlet, controlled from the dash, was fitted. For the road portion of the trial the fuel consumption was at the rate of 76.65 miles per gallon, equivalent to 58.55 ton-miles per gallon. During the Brooklands portion of the trial, the engine was missing fire at speeds over 40 miles per hour. The speed tests were carried out on aviation spirit and the road consumption test on benzol. The missing fire continued at high engine speeds, when on a low gear during the road portion of the trial.

ARTHUR STANLEY, Chairman.

G. H. BAILLIE, Chairman of Technical Committee.

J. W. ORDE, Secretary.

Pall Mall, London, S.W.
28th October, 1920.

THE OGSTON MOTOR CO. (1918) LTD.

Deemster Works : Victoria Road, Acton, W.3

Telephone : Chiswick 1289, 2044

Telegrams : "Ogstonia," London

THE NEW BIRTH OF BRITISH ADVERTISING

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British Business men came from everywhere, and saw, and judged. The result is that British Advertising goes forward with a new life and vigour, and its progress is guided by a bigger ideal of Service.

"Slowly but, as is his way, surely" (said the "Daily Mail") "John Bull is awakening to the fact, long known to his Canadian, Australian and American cousins, that Advertising is a mighty force in Commerce."

It is high time he did so.

A strong Advertising Service is necessary to this country if it means to fight foreign competition, especially that form of it which is known as "dumping." It is necessary also for overcoming stagnation in the home market, and for pushing our trade overseas in the face of new and rival interests.

Advertising must be recognised as a part of the great merchandising operation in business, and as linked intimately with Production, Distribution, and Sales effort.

Only by founding Advertising on a sound selling plan can you therefore truly emancipate it from error and waste, and reveal its marvellous force.

The house of Crawfords is organised to give this constructive Advertising Service—the only Service which merits the serious consideration of manufacturers and others who have strong progressive aims.

W. S. CRAWFORD · LTD

CRAVEN HOUSE, KINGSWAY, LONDON, W.C. 2

And at 55, FETTER LANE, E.C. 4

Telephone: Regent 6520



LOW initial outlay, combined with minimum running expenses, are the prominent consideration of the present day. At the same time no car owner wishes to sacrifice the maximum comfort and pleasure obtainable from motoring whether for business or relaxation from same.

Complete with all possible refinements

£ 475

(2 or 4 SEATER)

The 1921 MASCOTTE MINOR.

A comfortable 2-Seater 4-wheeled Cyclecar. Fitted with a 4-cylinder water-cooled engine, friction drive and final chain transmission, with oversize 650 x 65 tyres, dynamo lighting and full equipment, it is the Cyclecar De Luxe, at

£275

Send for Particulars

MASCOTTE ENGINEERING CO., LTD.
237, KENSAL ROAD, LONDON, W.10

Telephone : PARK 2814

SWANLITE

THE PERFECTED ELECTRICAL PLANT FOR LIGHT AND POWER

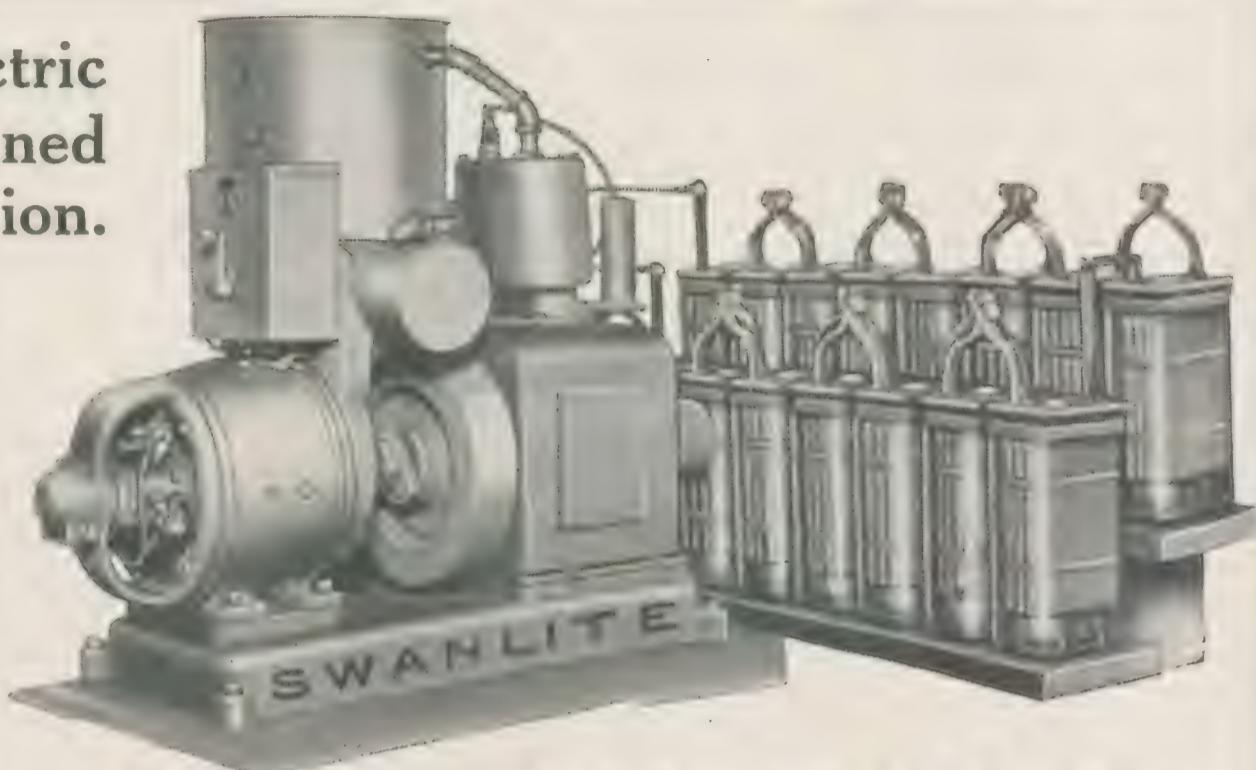
The SWANLITE Electric Plant is a self-contained miniature power station.

A $3\frac{1}{2}$ h.p. engine is direct connected to the dynamo and produces 1250 watts of electric current. This current is stored in a standard battery of accumulators from which the current is distributed for your use either as light or heat or power.

SWANLITE itself is compact, occupies but $6\frac{1}{2}$ square feet of floor space. The engine is simple, dependable, of the reliable, universally used, four cycle, single cylinder type, water cooled, burns petrol or paraffin. SWANLITE brings comfort and convenience at minimum cost to places not served by power stations such as estates, bungalows, churches, hotels, clubs, farms, yachts, etc.

Over 15,000 SWANLITES are in use throughout the world furnishing light and power to satisfied owners. For established agents throughout Great Britain and Europe, we have a very attractive proposition. We will give exclusive sales rights to firms who are fully equipped to serve the high grade clientèle who purchase such a quality plant as SWANLITE.

Our beautiful descriptive catalogue will be sent upon request.



BLACK SWAN COMPANY
29 Great Pulteney Street, LONDON, W.1

INDIANA LORRIES

1 $\frac{1}{4}$
to
5
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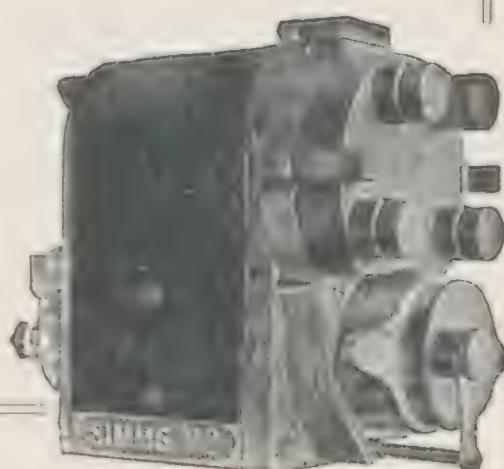
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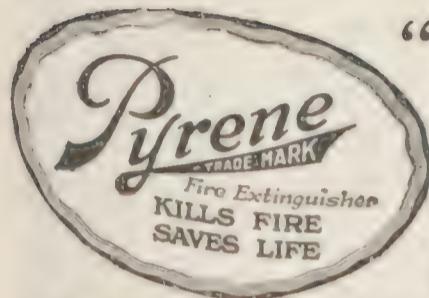
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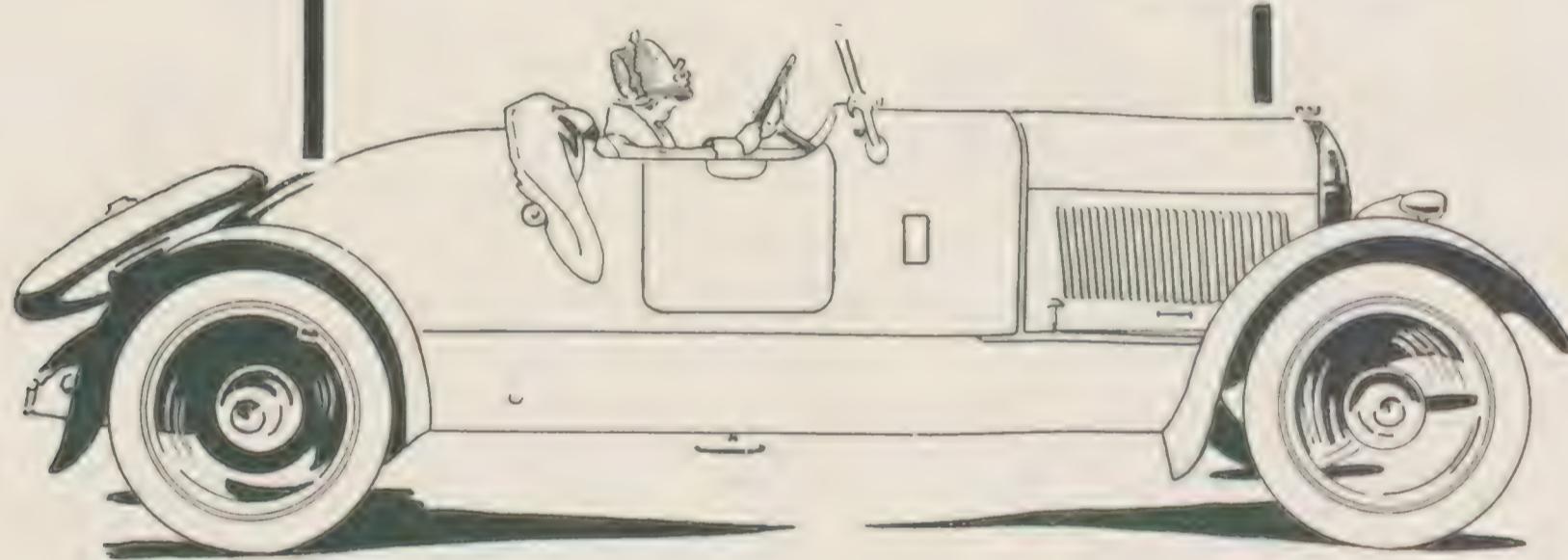
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Page xxix

The Motor-Owner, January, 1921

WHAT IS THE BEST CAR OF THE YEAR?

Mr. W. H. Berry, the well-known Motoring Writer, said, in an article which recently appeared in the "Daily Despatch": "Here we reach the problem of what is the best car of the year. Taking everything into consideration, factory, service, design and material used, I have no hesitation in casting my vote for the 16 h.p. TALBOT-DARRACQ (4 cylinder)"

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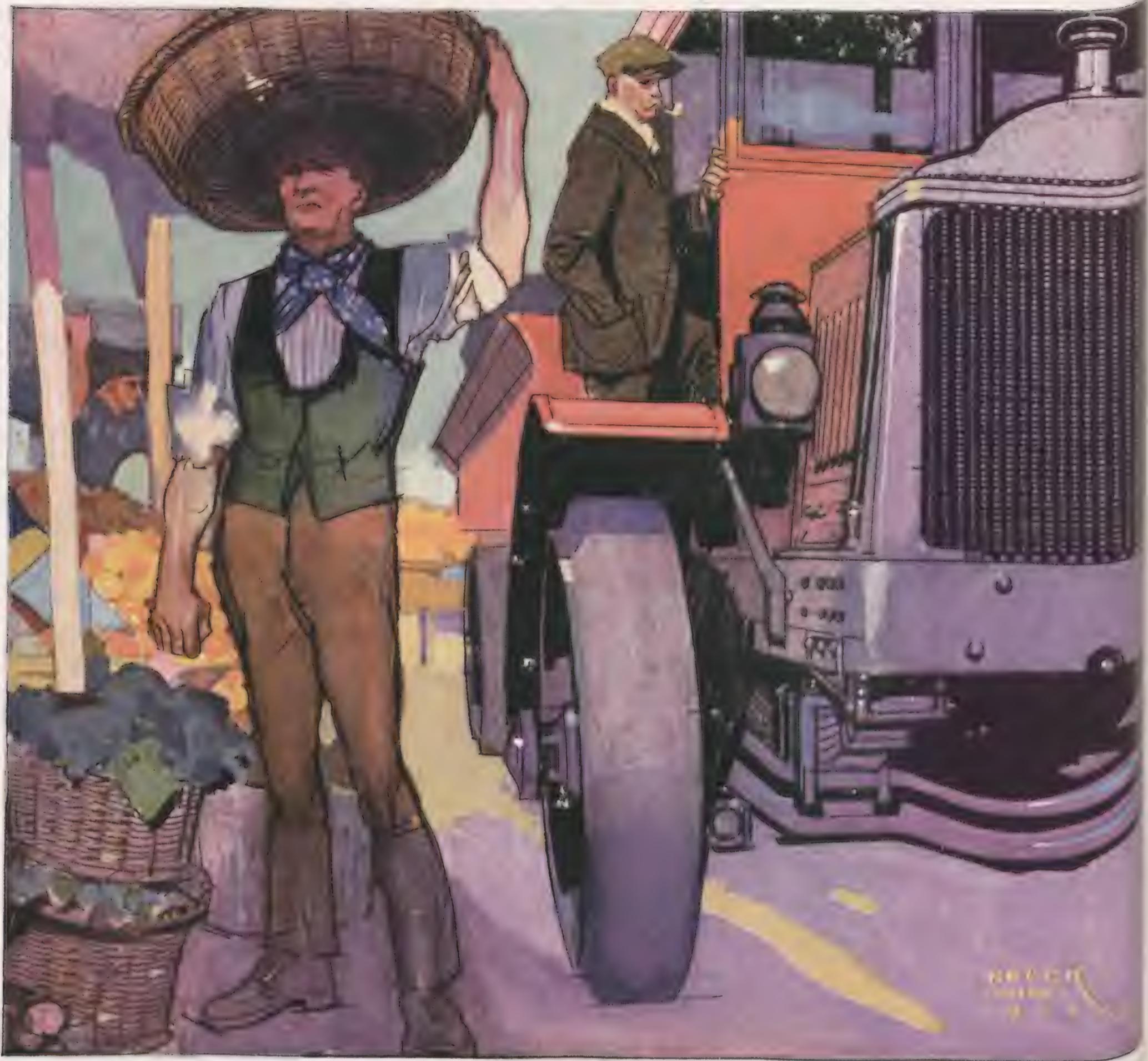
"22nd September, 1920

"I feel that I have not fully explained how delighted I am with the whole running and behaviour of the car on this test run. "It is the first Albert I have driven, and of the many cars I have driven of different makes, *I have never had a smoother running or more delightful car to handle.* After driving for the first hour without a stop, I opened out and received a great surprise, both in the manner in which she picked up and in her speed.

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JANUARY, 1921

Vol. II.

No. 20



The MOTOR-OWNER

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The Motor Owner

*Rounding a "hairpin" on
the famous Amulree Hill.*

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Subscriptions should be directed to the Publisher at the above address.
Contributions should be addressed to the Editor of "The Motor-Owner," 10, Henrietta Street, W.C.2, and should be accompanied by a stamped, addressed envelope. While every effort will be made to return them if unsuitable, the Editor cannot hold himself responsible in case of loss or damage.

AFTER DUE REFLECTION.

What the Government says It is neither within our scope nor within that of any citizen to criticise the measures which the present Government has legalised during its tenure of office, for the simple reason that for a great part of that period either war or post-war conditions of great difficulty have prevailed. The Government has doubtless done its best, and we may well let it go at that. But is there any reason why they, or it, should be obstinate? It has been shown that the new scheme of automobile taxation is both unfair and unpopular. The latter does not matter, except in so far as votes are concerned; and even this is a factor that may have some significance before the matter is finished with. That remark, however, has an unpleasant air about it, and we prefer to deal only with the aspect of the case as it affects popularity and fairness. We know, as mere citizens, that much money is required to run the nation as a commercial enterprise, and, individually, we are prepared to contribute our quota. Why, though, simply because we are motorists, and therefore long-suffering, should we have an unfair measure thrust upon us—in spite of the advice of experts, in spite of the fact that the Government could have obtained an equivalent revenue by fair means? Every source of information was open; many suggestions of practical value were made—but the

The Motor-Owner

£1 per h.p. tax is now law. On page 6 of this issue appears an interesting statement by Sir William Joynson Hicks, in which, with his usual incisiveness, he tells why he dislikes the new tax.

—and What We Say We Should Do. In the meantime, therefore, we have got to put up with the new form of taxation.

In some cases it will make a very much greater difference than others; and in some, consequently, a hint of a method of economy will be welcome. In all cases, however, looking at the matter as citizens of the Empire rather than as individual motorists, fuel economy—as it affects both the future price and the quantity available for use—must appeal as a matter of vital importance. THE MOTOR-OWNER has been harping on this subject for months, knowing that in the long run the matter would be taken up by a competent body having the interests and the welfare of motorists at heart, and we are now glad to say that negotiations have been entered into between ourselves and the Royal Automobile Club for an economy test. Prizes will be given by THE MOTOR-OWNER for the best economy results, and it is hoped that not only the R.A.C. itself, but all its associated clubs as well, will take part in the test. We ourselves, in the course of a recent test at Brooklands, have given a lead to motorists in showing how considerable economy with insignificant inconvenience may be effected; we have shown that, simply by fitting smaller jets in the carburetters of our cars, we may gain an increase in mileage of 22 per cent. on a given quantity of fuel, and that in so doing we lose only two miles an hour in our maximum speed, an almost negligible amount of speed in hill climbing, and a certain small measure of liveliness in acceleration. The latter, probably, is the most important loss of all, since the question of safety in driving enters into it, but it can be shown that the loss is so small that it would be scarcely noticeable. And, as a reward for these very small sacrifices, one has the knowledge that a saving of something like 40 million gallons of petrol a year would be gained. We refer our readers to pages 4 and 5 for further information on the subject of National Petrol Economy.

R.A.C. PETROL ECONOMY TEST.

The Royal Automobile Club Adopts "The Motor-Owner's" Scheme—Valuable Prizes.

(Exclusive Illustrations by
"The Motor-Owner.")

IT is necessary to concentrate public attention on the possibilities of more economical motoring. With the co-operation of the R.A.C. THE MOTOR-OWNER is going to prove the possibilities of cheaper motoring. There is no need to labour the subject. Cheaper motoring means more motoring. More motoring means more industrial activity. That activity will not be confined to the motor industry. Motoring costs under present conditions have an important bearing on the life of the nation. Reduce road transport costs and you increase the industrial activity of the nation. You also reduce the cost of living.

There is a national cry for economy. We must extend its scope to include economy in consumption. We must cry "Halt" to undue luxury in petrol consumption. Too long have we worshipped at the shrine of the false god of super-luxury in acceleration and speed. As a nation we can no longer afford to do so. We must have road transport efficiency—but we must cut out luxury. We must economise in petrol consumption to the fullest extent compatible with really adequate efficiency.

Every motorists knows that the car can be run more economically in regard to petrol consumption. Few put that knowledge to practical use. Still fewer know the extent of the economy practicable without sacrificing efficiency. There is good work to do in concentrating public attention on that all-important fact. That is the

work THE MOTOR-OWNER has undertaken in conjunction with the R.A.C.

Briefly the idea is to organise on a suitable date in the early part of this year a series of petrol economy tests. The competent body for undertaking such a scheme is the R.A.C. and its associated clubs throughout the Kingdom. Recognising the importance of the subject and its wide national incidence, the club has decided to run such an event, and solicit the co-operation of its affiliated clubs in various parts of the country.

In order to give a competitive character to the tests, "The Motor-Owner" will provide a series of valuable prizes to the winners, the second and third contestants in each class.

The number of classes and kindred details will be decided and announced by the R.A.C. in due course.

During the last few months, THE MOTOR-OWNER has strenuously advocated the cause of

national petrol economy. The articles have been written by our Technical and Consulting Editor, Captain E. de Normanville.

In turn we submitted the case to the R.A.C., and are glad to acknowledge their whole-hearted support of a cause which we believe to be of great importance to the nation, to the motor industry, and to the motorist. We anticipate that the results will prove an "eye-opener" as to what economy is practicable without sacrificing efficiency. That



Climbing Brooklands test hill in "The Motor-Owner's" experimental Economy Test.



Filling up "The Motor-Owner" Economy Test cars with measured quantities of fuel.

is the result we are looking for, the result we want, and the result we know can be obtained.

We have already proved the case up to a point. To demonstrate our contention that a very considerable quantity of petrol may be saved by the average motor user with practically no inconvenience to himself (in this case simply by fitting smaller, or "economy," jets in his carburettor) we recently organised a brief test with six representative cars at Brooklands. The results—wholly satisfactory — were given in detail in the November MOTOR-OWNER, but they may usefully be recapitulated in a summarised form. Shortly, it was found that with the six cars there was an average saving of petrol on a given mileage, or proportionate increase of mileage on a given quantity of petrol, of 22 per cent.

In payment for this material advantage, the cars lost an average of two miles per hour on their maximum speed, and they took an average of $1\frac{1}{2}$ seconds longer to climb the test hill—one car was actually a shade faster!

This, it must be admitted, was a somewhat remarkable result. The saving in fuel, if all motor vehicle owners adopted our plan, would amount to something like 40,000,000 gallons a year, thus not only tending to reduce the price of the spirit and effecting a double economy in each individual case, but also freeing an enormous quantity of fuel for essential, national needs. And it must be remembered that the tests were absolutely un-rehearsed. Beyond bringing some spare jets, the drivers did not know the nature of the test until they reached Brooklands !

If by such simple and untested means so important a saving can be gained, for so nominal a loss, what about the future ? What will be the results after reasonable experimenting ? What the results when an extra air valve or some similar inexpensive fitting is used ? That is the problem we wish to solve, and intend to solve, and we shall return to the subject in our next issue.



Changing to an "economy" jet on the Ruston-Hornsby car at Brooklands.

A NOTE TO READERS.

In the meantime, and in view of the fact that a thorough test is to be made, we invite our readers to acquaint us with any means which they have taken to secure economy, whether successful or not. Apart from the fact that ideas may not have been worked out properly, or the results may have been improperly applied, we shall welcome letters containing suggestions, no matter how apparently wild. All these things will be given serious attention, and, where they seem to be worth it, an equally serious test, and no one can say how valuable to the motor-owner and to the nation the results may prove to be. Many of the most financially productive inventions have been developed from the simplest and, seemingly, silliest possible ideas, and it is quite on the cards that some idea at the back of a reader's mind—so revolutionary and undeveloped that he has hesitated to mention it to any one—may turn out to be an epoch-making discovery.

Anyway, we intend to discover some means of making motoring cheaper, and we invite our readers to help us.



A busy scene at Brooklands during "The Motor-Owner's" experimental Economy Test.

*Sir W.
Joynson
Hicks, as
a motorist—
and
consequently
a member of
the alleged
“idle rich”—
takes to a
scooter as
a means of
economy!*



WHEN Sir Eric Geddes's proposals to alter the basis of taxation of motor-cars from petrol to horse-power were foreshadowed in the early part of last year they were received with a storm of opposition from the motor trade and from all private users.

It is quite true that some of the commercial users, led by my friend, Mr. Shrapnell Smith, appeared highly pleased and welcomed the Geddesian steam-roller over their backs.

We now know something of the result of these taxes. If you take 22 of the principal British manufacturers, the average market value of their share capital has dropped from 35s. to 17s. per £ share. Their total capital was valued in January, before the taxes were instituted, at about £11,000,000. It has now fallen to under £6,000,000. Several motor works have closed down or are in the hands of receivers; another big one is carrying on only through the good feeling between the firm and its employees, who are accepting 25 per cent. reduction in wages.

Why has this fall taken place? The manufacturers do not pay the taxes. It is simply that the public have realised that the taxes are monstrously unfair and are declining to purchase anything except quite small cars. Equally, the man who used to have two or three cars is now satisfied with one. Many of us who gave up our cars through patriotic reasons during the war looked forward to having a couple after the war, say one for family use and a small runabout car. Those men, the average men, are confining themselves to one car.

The petrol taxation would not have caused any increase in taxation to the man who owns two cars and drives them himself, because it is a feat very difficult of achievement to drive two cars at once; but the Government taxes two cars at once under the new scheme.

Of all men, Sir Eric Geddes shows least sign of repentance. He has now got before the House what is called a Roads Bill, but it more properly should be called a "Bureaucracy Endowment Bill." It is fastening the rivets of bureaucracy upon the whole of the motor-users of the country.

I am ashamed to say that some of the representatives of motoring have lent themselves to riveting the fetters upon their colleagues. There is a certain class of man who loves

THE NEW TAXATION. Why I Do Not Like It.

By SIR WILLIAM JOYNSON HICKS.

Motor-owners may well be confused, after all the discussion that the subject of the new taxation has aroused, as to just how it affects each individual case. These are the main facts: A motor-owner will pay a tax of £1 for each unit of horse-power of his engine. For cars made before January 1st, 1913, a rebate of 25 per cent. is made. The tax may be paid quarterly. The actual licence must be carried on the car. A registration book, constituting evidence of ownership, will be issued, but need not be carried. Existing number plates will be retained.

(Cartoon by "The Motor-Owner" Studios.)

to be "hand and glove" with the Minister or his officials; who is always trotting down to Whitehall and talking things over; who lives for the joy of being on a Departmental Committee, and if you go on a Committee to prepare regulations, obviously you have to assent to the regulations.

The result of this we see in the new Roads Bill with all its meddlesome interferences. You have got to have your number plate as before, and if the number plate is a sixteenth of an inch too big or too small you are liable to a fine of £20 for it; or if it is half an inch in the wrong place—again £20 fine. You have got to have a new licence card placed in a new brass-bound frame stuck in a new position on the car; and then you have got to have a registration book—a pretty little document, as Sir Eric called it in the House—and as far as I can see, the safest plan is to wear it next your skin so that it does not get lost, as you have to produce it every time you pay your motor taxes and also when you sell your car.

Selling cars is, in the future, going to be a matter which will require the assistance of two lawyers and a patent agent. Let us see what one has to do. First of all, the vendor has to make a note of the sale in the precious document; then he has to send the book to the Registration Authority; then the purchaser has to go off to the Registration Authority and intimate that he has bought the car; then the Registration Authority of the purchaser apparently writes to the Registration Authority of the vendor, and the vendor's Registration Authority cancels the vendor's registration and sends the registration book back to the purchaser's Registration Authority. The purchaser's Registration Authority then enters the necessary particulars on its record and finally sends the document back to the purchaser, who, as it is now doubly valuable, would again tie it round his neck. Really the whole thing is doing away with the freedom of life in this country. I wonder how many extra officials are going to be fastened on the taxpayers to carry out the provisions of this precious Bill.

My view is that before many years are over, not only masters but the whole of the community will rise up and have one general slaughter of the bureaucrats.

THE 10·5 GALLOWAY:

AN enterprising bid for fortune is being made by the Galloway Engineering Co., Ltd., of Kirkcudbright, N.B. The firm aim at a car that will, on the one hand, provide comfort, satisfaction and durability, and, on the other, not make too heavy a claim upon the pocket. Thus, combined with an attractive and workmanlike model, the makers claim to offer a car in which cost of production is happily reduced. To this end they utilise local water power, which is harnessed to turbines operating the electrical machinery in the factory.

The new and extensive factory possesses, therefore, a welcome advantage, and it is estimated that a large number of the 1921 10·5 Galloways will be offered to the public at a reasonable figure, for, as the firm state, "a large proportion of the cost of manufacture is cut away."

According to our information, the car is a two-seated coupé, weighing complete, with a dickey seat, no more than 18 cwt. It will be seen, upon reference to the table at the foot of this page, that the car conforms in the main with popular design. It possesses, however, the peculiarity that the control pedals are reversed—for which the makers have no doubt some sound reason, but which in no way appeals to us.

A commendable point is the way the whole of the springs

Illustrating the Galloway's mechanical features. The propeller shaft is unenclosed, and has fabric universal joints at either end.

are protected, being enveloped by mud and dust-defying gaiters. Moreover the transmission gear is saved from strains from the brakes,

AN ECONOMY CAR.

the main supply is exhausted there is still a gallon that can be tapped.

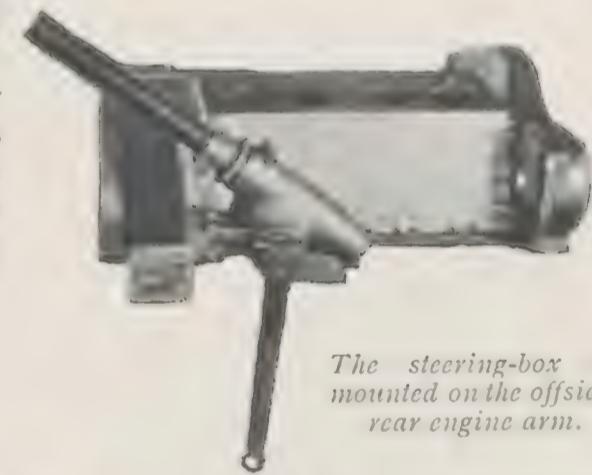
For a small car the ground clearance is good—8½ inches—and damaged road wheels should be unknown, seeing that they are Michelin discs, of the detachable sort. There appears to be nothing to criticise adversely in the engine lubrication system, nor yet in the transmission, while the general accessibility may reasonably be termed good. In the Lucas dynamo lighting and self-

starting equipment one finds another commendable point, with which rank the fabric universal joints, a type that has given great satisfaction on heavy and hard-working vehicles such as the L.G.O.C. omnibuses.

As we mentioned above, the car is turned out as a coupé. It is a flush-sided streamline design with a collapsible head, frameless windows that are noiseless, and when not in use concealed in the door panels. The car appears to lend itself to either the open or the closed pattern equally readily; quality and comfort are aimed at, and a wide door on each side enables both driver and passenger to enter or leave without disturbing the other.

Rich green is the standard colour, relief being given by fine black lines that harmonise with the enamelled wings of similar tint.

Produced at so moderate a figure as £550, complete with full equipment, the Galloway coupé will no doubt arouse considerable interest as to its finish. In this case low price does not appear to entail poor satisfaction. In the head, for example, which is necessarily simple in construction, we noticed that a



The steering-box is mounted on the offside rear engine arm.



*The 10·5 Galloway Coupé,
Complete at £550.*

Four cylinders, 65 by 110.
Mono-bloc detachable head.
Positive lubrication.
Galloway-Zenith carburetter.
British H.T. magneto.
Three-speed gear-box.
Fabric universal joints.
Worm and wheel steering; with
adjustment for wear.

Springs: All are protected from wet or dust by gaiters.
Control pedals. These differ from customary practice, the left hand one operating the brake and accelerator, the other controlling the clutch.
Lucas self-starter and lighting dynamo.

special light and weather-proof material is employed. Claims, that no doubt time will substantiate, are made that it is rigid and easy to handle. High quality cord cloth, suitably tinted and packed with horse hair and springs, adds real comfort to the seats, and the few bright portions of the car, being aluminium-finished or nickel plated, preserve without attention their original lustre.

Taken as a whole this car appears to be a sound and reliable job.



The compact gear-box. The control pedals are unusual; that on the left operating the brake and accelerator, the other controlling the clutch.

since both foot and hand brakes operate—where they ought—on the rear wheels. We notice that the carburetter also, a Zenith, has been modified, the hot air intake being embodied in the cylinder design, while a cold air valve enables one to regulate the air supply temperature.

Another point that we have frequently suggested as desirable is carried into effect on the Galloway. It is to arrange for the holding of a petrol reserve, for in this case, when

WINTERING ON

Winter is a harsh word, and when one associates it with a typical raw day in good old London Town—well, can one blame those

Although Nice is a more comfortable winter abode than London, you will notice, even in this

shade of this picture which Londoners suggest the air a day or so just now.

[Exclusive Illustrations by

British cars are by no means lacking at Nice—not to mention British number plates;

in fact, it appears that we largely keep the Riviera going.



Here is another British car and party. As we have said,

we if help

The contrasting shade of this picture suggest the air a day or so just now.

s a more
er abode
ou will
in this

warm-looking picture,
that there is still a need
for overcoats — which
is little consolation !

THE RIVIERA.

who, deserting their native country,
put in a season of comparative
comfort at Nice or else-
where in the Sunny
South ?

"The Motor Owner."]

The char-à-bancs has pene-
trated even to Nice. One is
inclined to regret it; but,

needless to say, some inter-
esting trips may be taken

Many a handsome
car is to be seen,
to match the hand-
some buildings.

we do not blame,
if we cannot
help envying, them.

A MOTORIST'S



MUSINGS

If some historian of the future describes the manners and customs of the British in the reign of George V., I trust that when he touches upon the subject of the development of motor transit he will divide the period into the pre-war and post-war eras. Before the war the possession of a car usually indicated that the owner was a person of some social standing whose manners were a considerable improvement upon those of the omnipresent cad. Motorists, like yachtsmen, were once a class by themselves. They had a code of chivalrous behaviour according to which it was a crime to pass another motorist in distress without offering assistance. An astonishing number of them were gentlemen in the sense that we all understand, but cannot define, and they were always sportsmen. The hotels they favoured were pleasant places at which they met men of their own class and courteously exchanged gossip relating to police traps, bad roads and gradients. Also of sheep, cows, and other reptiles.

Those who have returned to the road after a lapse of five years must surely think regretfully of days that have passed. To them it seems that the etiquette of the road has been forgotten. In old days there were a few "road hogs" certainly, but there was a certain dignity about them. They usually drove really fast cars and knew how to handle them. To-day we have the would-be-hog, who has not even learned the manners of the full-grown prototype.

We all remember the political parties known as the "Whole Hogs" and the "Little Pigs." I am going to dub the new type of motorists the "Little Pigs." I have studied their habits carefully and have endeavoured to regard them with the pleasing tolerance that Mr. Aubrey Hopwood was preaching when he wrote his famous lines :—

Be genial to the Rattlesnake,
And pet the Chimpanzee ;
No liberties with Bisons take,
Be patient with the Flea.
Remember, as you lie awake
He has his livelihood
to make

In
t h e
spirit
of piety
I try to
love my
fellows,
even if I
have to a-
void some of
them in order
to do it, but my
affection for the
"Little Pigs" is as
tepid as the suns of last
summer.
I will enumerate a few
of the species. A com-
mon example is the
owner of a small car
that has been made to

Mainly Upon Whole Hogs and Little Pigs.

By CAPTAIN P. A. BARRON.

look "sporting." The wheels are fitted with aluminium discs and the silencer has, apparently, been replaced by a megaphone. The owner wears a racing helmet when his brakes failed he m.p.h. down hill.

This little member of being a newcomer in quite convinced that His ambition is to seems never to powered cars those of which touring car day and If his car a b l e , enced will

25

for he would merely pass more experienced drivers and leave them far behind. But this he not and cannot do. His normal pace is about miles per hour until he sees a car ahead. Then the lust of conquest seizes him and he opens the throttle. If the leading car increases speed slightly he regards this as a challenge. He gives his passenger a smile intended to indicate that she is about to see some sport. The leading car slows down slightly for a curve and the "Little Pig" takes the opportunity of passing, thereby risking a crash if another vehicle is on this blind portion of the road. He is quite unconscious of the danger and turns to his passenger with a smile two sizes larger than the first to imply triumph.

Having passed the big car, which may be capable of about twice the speed of that of his own, he slackens down again to his normal 25 m.p.h., so that the following vehicle has to grope its way through his dust or show its superiority by attaining such a high speed that the "Little Pig" will be made to realise that it is useless to make a further effort.

One wishes sometimes for an armoured car with which one could run down some of the modern cads on castors. A few lessons to people who are always on the wrong side at corners would be very useful if administered by a tank.

I recall a pleasing incident. A motorist speeding along a country road found his way blocked by huntsmen and hounds. He slowed down to zero miles per hour, waited until the hounds were, as a motorist would say, "parked" by the roadside, and then with a salute drove on.

I wonder in what words our friends the "Little Pigs" would have described those obstructing hounds.

To take the charitable view, we must conclude that many sin in ignorance and will learn. The "Whole Hogs" may be hopeless, but the "Little Pigs" may reform.

because on one occasion attained a speed of 45



*A
long run
and a
strong one.*

THE PARADISE OF GLOOM. By CHRISTOPHER WENLOCK.

Winter's Opportunity for the Photographic Motorist.

THOUGH the light of summer suns no longer falls upon the land, though the glory of the autumn tints has faded away, yet the beauty of the world remains, the beauty of quiet colouring and subdued tones. Winter has its charms for those with an artistic eye, who dare its inclemencies and face its hardships.

The fogs that wrap all things in their clinging folds have a wonderful way of softening hard features and adding to nature a mysterious suggestiveness that is of infinite beauty.

The road through the woodland is never quite so satisfying to the artist as when the mist wears down the hard lines and veils the strong contrast of light and shade and allows on every hand that play of imagination which gratifies the moods and temperament of our complex nature.

The long touring days lie behind us and the open country does not now present so many temptations to lure the motorist from home; and for the most part during the winter months it is business and necessity that swing wide the garage doors and call us forth to the road; but even then the most imperative call of duty need not blind us to the fact that the world is full of beauty and that every mile may be a feast of pleasure to the observant and the appreciative mind. Nor is it ever wise, if we value the records of nature's pictorial interest, to leave the camera at home.

True it is that the dull days with their meagre light do not make the photographer's task an easy one, and at times they thwart his designs utterly; but the prizes won out of the gloom may be of a higher intrinsic value than the easier victories that fall to us under the clear light of the long June days.

With a stand camera and motionless objects one can breathe defiance at the lowering skies and enshrouding gloom, and there are still days of windlessness in the winter months when one may obtain photographs of rare merit in misty glade or meadow. Even the city street or the conventional country road may reveal an unexpected grace and charm when the soft fog drapes its common features with dreamy mystery.

Beyond all this the winter gales sweep away the curtain of the leaves, offering new visions in the landscape, opening up long vistas of scenery amid hill and dale that lie concealed throughout the leafy months; and there are photographs of wayside objects and buildings of historic interest that can only be obtained when the trees are bare and the impenetrable barrier of the dense hedgerows has been partially cleared away.

But chief of all winter's addi-

tions to the pictorial beauty of the world is its white snowfall; and so rarely, especially in the southern counties, does the snow lie deep and pure for any appreciable time that those who have ambition for a lasting record of the white-clad world must hasten forth before the sun has thawed the snow from the branches of the trees.

Nothing is more beautiful than the tree-lined lanes or the forest path when every branch is laden with its weight of snow, when the untrodden pathway stretches away into the far-off whiteness of the white world beyond. What fresh charm is added to the farmstead and its lumbering wagons when all are clothed in spotless white! What unsullied peace lies along the river, flowing silently between its radiant banks shimmering in the morning sun! What transformation in the most commonplace things along the way and along the

most uninteresting of uninteresting ways!

It is just on those rare occasions when the day breaks upon the fields of snow and the sun is already climbing slowly into a cloudless sky that the call sounds insistently upon the ear; but just at such times, too, that a thousand voices bid us stay at home. The price of sacrifice may be high, comforts must be left behind, the persistent stubbornness of the car in its icy garage must be met and overcome, the chill wind faced; but all these things will be accounted as nothing by the man whose heart is on fire with a passion for the wonders of the world; and when the chase is over and the search complete, when the warm fire greets the wanderer once again, and the dark room with its mysterious glow of ruby light has seen the task fulfilled, and there upon the wall at length hang the records of the courageous venture; scenes of infinite beauty with their mantle of clinging snow, the motorist-photographer will rejoice in his stern wayfaring, in his conquest over the luring temptations of warmth and ease and comfort; and, not for hours, not for days or weeks or months, but for years he will gaze and gaze again at the treasure he rescued from a transient world and saved from the destructive annihilation of time and hung for all to see upon the walls of his home.

All this may be worthy of a thought, for any day the chance may come, and even as it comes it tends to slip away for ever, and perchance according to the measure of the sacrifice will be the value of the prize we win.



The transformation of the winter fog.



In the veiled meadowland.

Amateur photographers are advised to turn to page 32 of this number of "The Motor-Owner" for particulars of our monthly Photographic Competition.



sides. But your footer public dearly loves a team-builder, whether in or out of print, so I risk only about three of each of my respective selections being chosen. Here they are :—

England :—H. H. Forsayth (Oxford University), back ; C. N. Lowe (Blackheath), E. Hammett (Newport), A. M. Smallwood (Leicester), and H. L. V. Day (Leicester) or S. W. Harris (Blackheath), three-quarters ; C. A. Kershaw (U.S.) and F. A. Waldock (Oxford) or W. J. A. Davies (U.S.), halves ; C. H. Pillman (Blackheath) (capt.), L. G. Brown (Blackheath), F. Taylor (Leicester), A. T. Voyce (Gloucester), T. Woods (Pontypool), C. S. Conway (Cambridge), W. W. Wakefield (Harlequins) and F. W. Mellish (Blackheath). Reserves : R. H. Bettington (Oxford University), R. Cove-Smith (Cambridge), P. H. Lawless (Richmond).

Wales :—J. Rees (Swansea), back ; A. Johnson (Cardiff), A. Cornish (Cardiff), J. Shea (Newport) or A. Jenkins (Llanelli) and A. E. J. Hollands (Newport), three-quarters ; J. Wetter, stand-off, and F. Reeves (Cross Keys), or J. Wetter (scrum) and F. A. Waldock, stand off, halves ; J. Jones (Aberavon), T. Parker (Swansea), J. Whitfield (Newport), G. Oliver (Pontypool), J. Williams (Blaina), among the forwards.

F. A. Waldock, born near Abergavenny, has a dual qualification, but as he is going out to British East Africa in January, may not be available. I name him in both teams as he is good enough for either.

Two players considered in the running for the English team are G. Edwards (Newport), born in Newport, and A. E. J. Hollands (Newport), born at Merthyr Tydfil. My views do not matter, but I consider both ineligible for an English cap on more grounds than one. Further, when there was a minor tempest in a tea-cup when S. H. Williams (Newport) was played for England in all four games of 1911, it was agreed between the rival Unions

THESE lines should burst upon an expectant world just about the time the teams to represent England and Wales at Twickenham on January 15th are announced. Inasmuch as I am writing them before the first Rugby Union Trial has taken place, it is an unusually foolish thing to do to hazard the probable constitution, or at any rate the bulk of it, of the two

Since I forecasted in the November number of "The Motor-Owner" that England would win on the fifteenth, I have seen enough footer to doubt whether that will happen. If C. H. Pillman does not play for England, and Reeves and Wetter are the Welsh halves, England will be beaten at half—and will therefore lose the match.

INTERNATIONAL

By E. H. D. SEWELL

Mr. Sewell admits that it is an unusually foolish thing to do to hazard the probable constitution of the teams to represent England and Wales at Twickenham on January 15th, but he holds that that henceforth all players born in Newport, and playing for Newport, are to be regarded as eligible for the Welsh XV.—on the sensible grounds that England has so wide a field of selection and Wales such a comparatively small one. Newport is a club affiliated to the Rugby Union

T. Woods, above-mentioned, is the ex-naval stoker who played for England against Scotland last March, but who having had enough of the stokehold is now playing for the Welsh club of Pontypool. A young forward who cannot be out of the running is H. L. Price (Bishop's Stortford), who has been playing in most of the Oxford trials, but who, as I write, has not been announced as a Blue. Bettington is the Oxford "googley" bowler and a most extraordinarily accurate left-footed place-kicker.

Since writing my article in the November number of THE MOTOR OWNER, wherein I forecasted an English success on January 15th, I have seen enough footer to cause me to doubt whether that will happen. I go so far as to say that C. H. Pillman does not play for England, and Reeves and Wetter are the Welsh halves. E.

land will be beaten at half—and will therefore lose the match. A Welsh side winning at half never loses ! The same applies to most teams, but with special force to these students of Rugby who know better than any of their rivals the value of good half-back play.

I do not name Forsayth as full back because I consider Cumberlege is done with. Far from that, he has several years more Rugby in him, but the Australian Rhodes Scholar is the better field of the two, just as good a kick, and probably a better tackler. Above all things, good fielding in a full-back pays against Wales. Against them he need not be a first-class tackler, for the sufficing reason that he never has only one man to stop.

On the whole I am afraid the ground record at Twickenham is in danger. England has yet to be beaten there by a home Union, and her



J. van Schalkwijk, the Stand-off, and Guy's stand-off, taking a pass at full speed.

RUGBY FOOTBALL.

(Exclusive Illustrations by "The Motor-Owner.")

the football public dearly loves a team-builder, and—well, anyway, here is his guess. It must be remembered that he was writing before the first Rugby Union Trial had taken place.

Chance this time should rest on something more substantial than the fact that W. J. A. Davies has never been on the losing side against Scotland, Wales or Ireland, and if he plays this Welsh match will be his eleventh against a home Union, and only his second against Wales. He has still his magnificent "hands" and his aptitude for making the most of every genuine scoring chance, but his kicking has not been so accurate on the whole this season and he has "run across" more than I have ever seen him do before. On the other hand, his partner, C. A. Kershaw, is a grade higher this season.

But the result, when all is boiled down, depends on the presence of Pillman. If he plays Wales will indeed be a fine side if they win.

The following week sees the hefty Frenchmen at Inverleith. That is going to be some clash! Quentin Durward not in it, though there may be a Le Balafré or two to see after it is over! Of the visiting side I anticipate the presence of Got (Perpignan), right wing; R. Crabos (Racing Club), centre; Jauréguy (Toulouse) or Serre (Perpignan), left wing; and possibly Salinié (Perpignan) three-quarters; Struxiano (scrum), captain, and Bousquet (Béziers) or Bilhac (Bayonne), half-backs; Pons (Toulouse), Sebedio (Béziers), Soulié (C.A.S.G.), Mouroux (Béziers), Larrieu (Tarbes), and Gayroud (Toulouse) among the forwards.

Scotland:—L. T. Brand (Edinburgh), back; E. B. Mackay (Glasgow Academicals), E. C. Fahmy (Abertillery), A. W. Angus (Watsonians) and A. Browning, three-quarters; A. T. Sloan (Edinburgh Academicals), stand off, J. A. R. Selby (Watsonians), halves; C. M. Usher (London Scottish), F. Kennedy (Stewart's

College), N. Macpherson (Newport), D. D. Duncan (Oxford), G. H. H. Maxwell (Edinburgh University), G. Thom (Kirkcaldy), R. A. Gallie (Glasgow Academicals) and A. N. E. Muir; forwards

Naturally it is out of the question to anticipate how people will shape in the Trials, but as all of Scotland's magnificent 1920 pack are still fit and playing well, it seems better to rely on experience. Scotland's lack

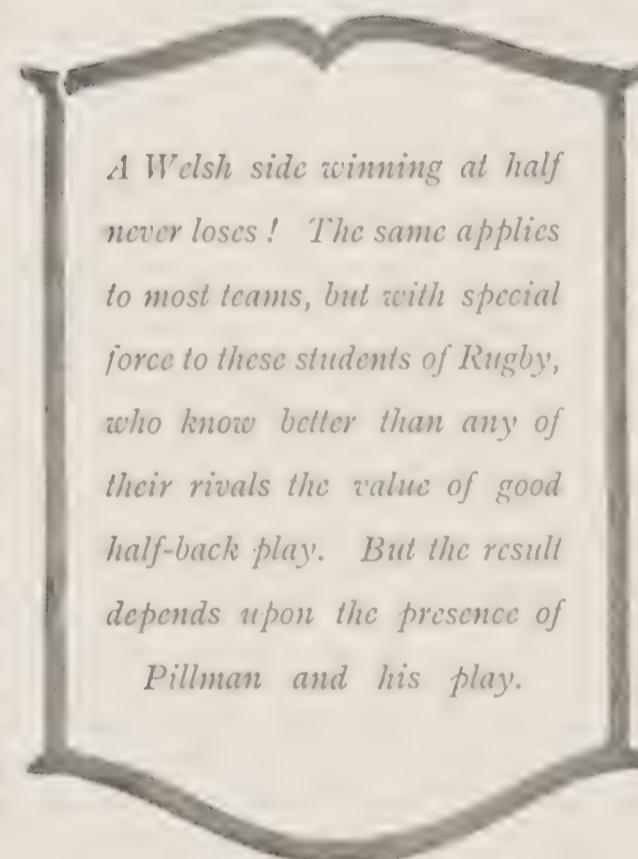
D. D. B. Cook,
the Cambridge
left wing,
taking a
pass.



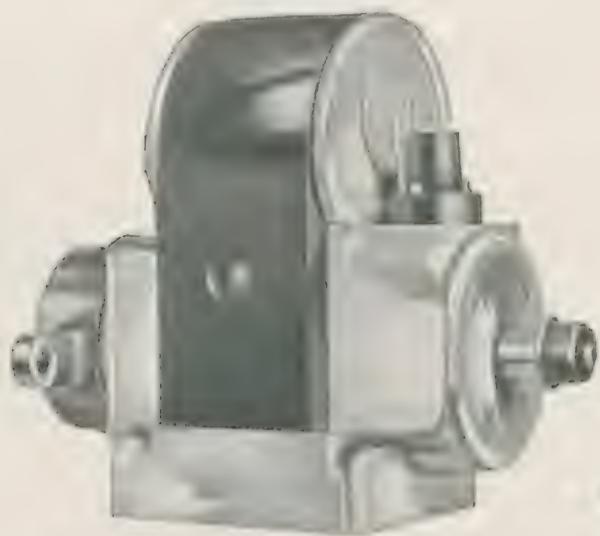
consists of centre three-quarters—but they are used to that.

THE DUNLOP BOOK.

PROBABLY the most remarkable touring book that the motorist has had put before him is "The Dunlop Book." The price, reduced to one guinea, is still fairly stiff for a mere guide-book—or at least one would be inclined to say so if one had not seen the book itself. Having studied it, however, one must admit that it is not only a remarkably ornamental production in its soft red calf binding, but that it is one of the two or three guide-books that no motoring tourist can afford to do without. As compared with the previous edition, the book has been completely revised, and, incidentally, the price has been materially reduced.



Doherty and Reitz try to "spoil" a pass from Krige to Graham Davies.



A new B.T-H. Magneto for light car engines.

during the past year were not, perhaps, so sensational as in the previous twelve months, nevertheless steady progress was made.

Last year may be called the year of the electric-starter, for at the show a year ago the self-starter jumped into prominence at a single bound. In some cases it seemed almost as if the designer of the car had said at the last moment : "By the way, we must have a starter; where shall we put it?" This cursory treatment did not always lead to good results, sometimes, in fact, to curse-ory remarks on the part of the motor-owner, for the electric-starter undoubtedly should be considered as a part of the general design of a car in order to secure the best results.

This year time has been given to consider these matters and to work out in detail the little problems connected with starting-switches, automatic gear apparatus, etc., all essential to successful working, if not very apparent to casual observers.

One of the most evident features of development in electrical apparatus is in connection with the British magneto, manufacturers being determined not to allow this important accessory to become again a foreign monopoly. Two examples of modern magneto improvements at this year's show especially call for notice. One is the C.M.I. "S.H. 617" magneto, introduced by the Conner Magneto and Ignition Co. for high-class six-cylinder engines. Briefly, the special features are an advance and retard range of 50° , and a spark of practically constant value over this range. On a six-cylinder engine the magneto must run at $1\frac{1}{2}$ times engine speed; consequently,

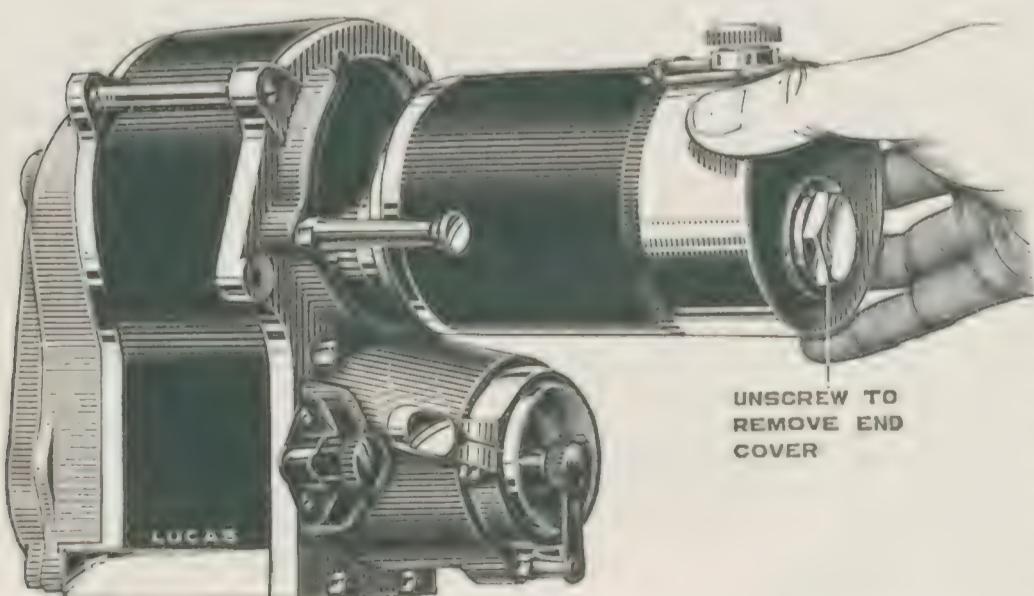
ELECTRICAL British Manufacturers Determined Magneto

While the past year may be regarded as essentially the year of the electric starter, the electrical automobile accessory world has been by no means devoid of other developments. The mag-

the ordinary magneto only gives a range of about 22° on the crankshaft. The new C.M.I. magneto will give a range of 33.3° on the crankshaft, with a proportionate improvement in flexibility of the engine in consequence. Moreover, the spark is practically constant in value over this range, as will be seen from the makers' diagram. In this chart, the number of revolutions at which the magneto will spark across a standard gap have been plotted against the degrees of advance of the magneto; the dotted line shows the result with a standard six-cylinder magneto, and the full line the same thing with the new magneto. It will be seen that at about 80 revolutions per minute the new magneto gives a spark under these conditions over the full range of 50° , and that this result is a great improvement on the standard type. With the latter machine at full retard the revolutions have to be increased to about 120 in order to produce a spark.

The cause of this remarkable result in the new magneto, simple as are all such things, is that the two trailing tips of the pole pieces have been elongated as far as the central line of the magneto, and round each of these tips is placed a simple copper ring. That is the whole secret. To explain the action completely would occupy too much space, but briefly it may be said that an opposing magnetic-field is generated in these coils in proportion to the speed, and this opposing field chokes back the main magnetic-field, keeping it in the place where it is most effective. As the speed rises, therefore, the magnetic-field is choked back more and more into the best position for a spark at full advance, and vice-versa. It is claimed that this magneto on a six-cylinder engine gives a result at slow speeds equal to battery ignition, while retaining all the well-known advantages of the ordinary magneto.

The other magneto to which reference has been made is the Watford, with movable extensions to the pole-shoes connected to the spark advance lever. With this construction a spark of equal intensity is claimed throughout the usual range of movement. As an example, it is stated that whereas the ordinary magneto is tested at full retard at a speed of 200 r.p.m., the new Watford is tested under the same condition at a speed of 60 to 100 r.p.m. The construction of this Watford magneto is unusually interesting. The movable steel pole-shoes are fixed to a brass ring and rotate simultaneously with the cam-ring, thus keeping the relative positions of contact-breaker opening and magnetic-field always the same. It must be understood that the ends of these pole-shoes are recessed, and engage with a spigot formed on the end-plate, thus retaining the correct clearance for the armature. The special design of the contact-breaker arm on this magneto should also be noticed; it consists of a very light triangular structure carefully balanced and fitted with a special form of fibre bush.



The Lucas Magdyno, showing the dynamo removed from its position.

DEVELOPMENTS.

to Prevent another Foreign Monopoly.—By F. H. HUTTON.

neto itself has been materially improved in several important respects, and notable combinations of the "mag" with the dynamo, and the latter with the starting motor have been made

which is guaranteed to withstand any climatic conditions without danger of "sticking-up."

A device in connection with the magneto which appears to be gaining in popularity is the "impulse-starter." The details naturally vary for each design, but the principle in all of them is the same, the armature being temporarily held back against the compression of a spiral spring until a certain degree of rotation has been reached, where a trip gear comes into operation and the armature flies forward at a rate of about 500 r.p.m. to catch up the shaft. When a speed of about 100 r.p.m. is reached in ordinary running, the device automatically cuts out, the machine then working as an ordinary magneto. One such starter is made by the B. T.-H. Co., while another new magneto for light-car engines is now manufactured by the same firm.

One of the most interesting electrical developments is undoubtedly the Entz magnetic transmission system of the Owen car. Although this system has made great progress in the U.S.A., in spite of hindrance due to war conditions, it is only in its infancy in this country.

The power is obtained from a petrol engine exactly the same as in any other car, but the method by which this power is transmitted to the road wheels is entirely different. In place of clutch, gear box, dynamo and starter are two dynamo-electric machines. The forward machine is known as a "clutch-generator," since it acts both as a generator of electricity and as a magnetic-clutch; the rear machine acts as a motor. The power from the engine is transmitted to the wheels partly as mechanical energy conveyed through the magnetic-clutch, and partly as electrical energy generated in the forward machine, which is converted back to mechanical energy in the rear machine. On top speed the energy is entirely mechanical; on lowest speed it is entirely electrical; on intermediate speeds the proportion of each depends on the position of the controller, which is regulated by a small lever on the steering-wheel.

Since the power is transmitted direct on top speed, which is used nearly all the time, there is no loss in conversion of energy such as occurs in cruder systems of electric transmission, the only generation of electricity being for energising the magnetic-clutch, quite an insignificant amount.

THE CADILLAC INSTALLATION.

The Cadillac car has always been in the van as regards electrical equipment, being the first car on which a complete lighting and starting system was installed as a standard. This was in the year 1912, and ever since that time the electrical features on this car have been noteworthy and generally ahead of the times. This year is no exception to that rule, a very complete Delco equipment being fitted with some especially interesting points.

In the place of main fuses two circuit-breakers are fitted, forming a very distinct advance from an engineering point

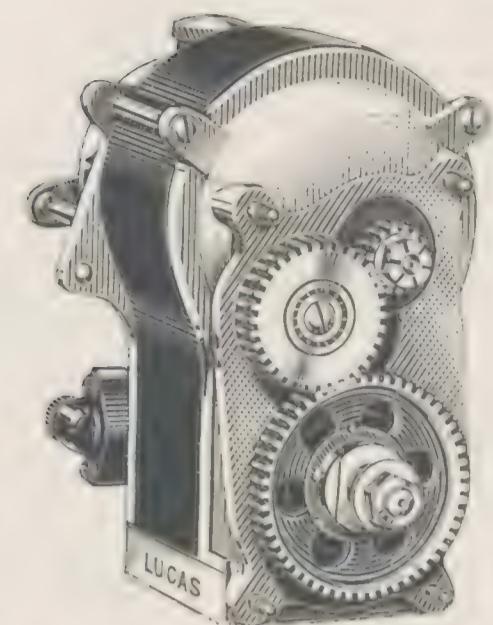
of view. Fuses are constantly a source of trouble; wherever they are used they are liable to deterioration and damage, and when used on cars are very frequently filled up with copper wire by a garage mechanic in order to prevent the trouble caused by fuses "blowing" mysteriously. The circuit-breaker represents a much more scientific achievement, and should replace the main fuse entirely in the future. On the Cadillac two circuit-breakers are used, one a "locking" type, which breaks the circuit and remains open when a short-circuit occurs until replaced by hand; the other is called the "vibrating" type, which gives notice of a short-circuit by buzzing, the current at the same time being cut down to a safe figure. The locking type controls the horn, inspection-lamp, and interior light circuits, while the vibrating type looks after the other lamp circuits and the ignition system.

Another practical feature on the Cadillac-Delco system is that double contact points are used on the ignition timer, thereby dividing up the current and consequently reducing the sparking and corrosion that occur at each in proportion.

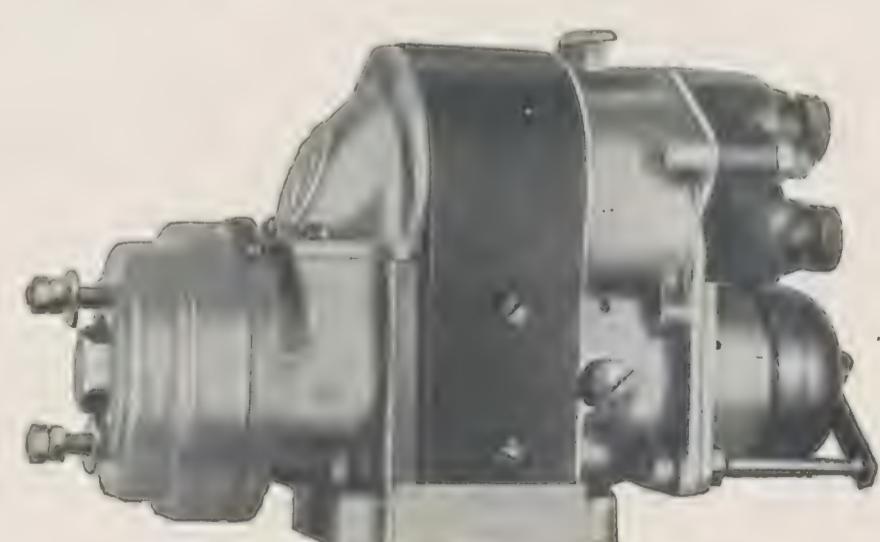
The spark advance is governed automatically, so that no attention is necessary to this point on the part of the driver.

The wiring, too often treated in a careless manner in many cars, is made a special feature on the Cadillac; the high-tension leads to the sparking-plugs are entirely encased in brass tubing, which is given a black nickel finish, the cables themselves being only visible at the points of connection to the plugs.

The motor-generator is a new model with a round frame, and has been improved in several details.



A back view of the Lucas Magdyno, with the gear cover removed to show the driving mechanism.



A B.T-H. Magneto with an "impulse" starter.



WHEN the guests were aroused by the horn
of the guard

At the George or the old Hen and Chickens,
How gay was the sight to be seen in the yard,
As you read in your Hazlitt or Dickens ;
Old friends and young lovers each bidding adieu
In the shrewd, eager air of the morning,
The Mail Coach painted vermillion and blue,
Gilt letters its panels adorning—

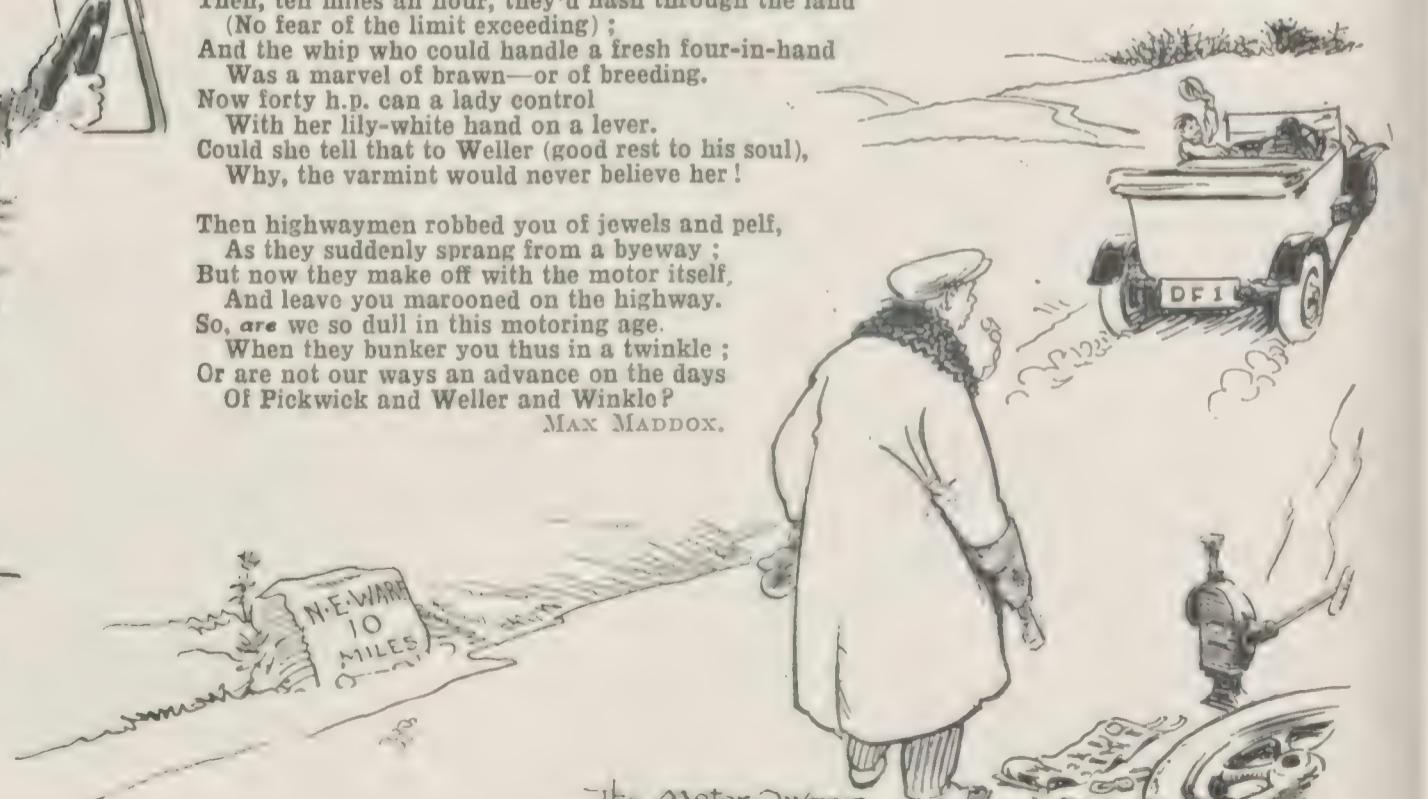
The Vivid, the Rocket, Old Times, or the Pearl,
To York or to Brighton outsetting,
The ribbons being handled, perhaps, by an Earl
With a *penchant* for bruising and betting ;
But more often far by an adipose cove
Like Weller (not Sam, but his father),
Who'd prate on the points of the cattle he drove,
And blow off the froth with you—rather !

There are folk who will turn with a sigh from that page ;
They miss the romance and the colour,
And vow we're so drab in this motoring age.
But *are* we so very much duller ?
Our cars are still painted vermillion and blue.
And bruising our popular vice is,
Whilst the old Hen and Chickens hasn't altered since
Dickens—
Excepting, of course, in its prices.

Then, ten miles an hour, they'd flash through the land
(No fear of the limit exceeding) ;
And the whip who could handle a fresh four-in-hand
Was a marvel of brawn—or of breeding.
Now forty h.p. can a lady control
With her lily-white hand on a lever.
Could she tell that to Weller (good rest to his soul),
Why, the varmint would never believe her !

Then highwaymen robbed you of jewels and pelf,
As they suddenly sprang from a byeway ;
But now they make off with the motor itself,
And leave you marooned on the highway.
So, *are* we so dull in this motoring age.
When they bunker you thus in a twinkle ;
Or are not our ways an advance on the days
Of Pickwick and Weller and Winkle ?

MAX MADDOX.



WOMAN AND THE CAR.

Opportunities at the January Sales.—By LENORE MAUDE.

FOR the woman whose dress allowance is limited January is the great opportunity or the great pitfall. The possibilities are accentuated more than ever this year, because Fashion is so generous in her scope, and because there is an atmosphere of flutter and uncertainty in regard to prices. Just what reductions the January sales will bring forth it is hard to prophesy; no one who thinks seriously can desire a slump in trade, but it is also impossible not to realise the boom at first was an artificial one. Already a drop in prices is clearly indicated in several lines, applying, of course, particularly to the "necessary" rather than to the "luxury" standards. But the woman who gives time and fore-thought to the subject of January sales should save from her dress allowance enough for those manifold little extra details that are the keynote of the really well-dressed woman.

Anyone who attends a big sale cannot help realising that there are hosts of women who never can resist a "bargain," quite forgetting that a thing is cheap only in proportion to one's need for it, and to pay even a small sum for something that one does not require is not economy.

There are, of course, infinite chances of buying short lengths of material invaluable for doing up frocks that are slightly on the wane, but even for this it is well to have some preliminary plan of campaign, including ideas as to styles and measurements, before starting out. Many a headache and much fatigue will be saved if this is done.

Short lengths of *crêpe de chine* and similar materials for "undies," etc., are always a good investment. And that reminds me. For the dress allowance that will not rise in these expensive days to more luxurious fabric I saw some delightful cream *chiffonelle* with a red cherry design which would make up charmingly, scalloped or buttonholed in the palest apple green silk, showing just about an inch of plain cream net for an edging beyond. These materials always come up so splendidly from the wash, and are so serviceable and dainty for everyday wear. Another very simple and practicable form of economy is effected by the purchase of a few fine semi-Shetland scarves which clever fingers can quickly transform into chemise vests. These make a splendid substitute for those unfortunates who dare not be without some form of wool during the winter months in England, but whose heart fails them before the horrible alternatives of having to pay fabulous sums

for the new Shetland vest, so vastly popular at the moment, or resigning themselves to the thick and uninteresting varieties at a smaller price.

A short remnant of sequin or beaded embroidery is often money well spent for the restoring of an evening *corsage*, and these trimmings have almost daily been growing more elaborate and more beautiful, from the intricately decorated georgette jumper or complete over-dress of sequin net down to the narrowest bands of flowered insertion, such as is used for trimming the smart afternoon or rest frock. Yet another becoming innovation is the renovation of afternoon or evening gowns by the addition of chains of coloured beads or jet, hung in long loops over a skirt of soft material. Moreover, with due thought as to the colour scheme, it is rarely false economy to buy a remnant of soft silk net such as may readily come in handy for one of the vandyked tunics—an easy way to freshen up a last season's dance frock. A dull orange, or certain shades of brown, for example, makes a singularly happy contrast over a gold tissue or brocade.

Variety is so infinite these days that it is almost impossible to say what cannot be usefully converted by a girl with ingenuity and dexterity. Broad brocaded ribbons, fur and lace—the alliances are extraordinary, and yet few can question the happiness of the result. We find velvet and the filmiest of lace, also fur, used with the most fragile ninons. In fact, every scrap in the fur box can be pressed into service, from the narrowest trimmings to the short square pieces that come in for one of the small brocade and fur toques so much beloved this winter.

Now that the season is so far advanced we hardly expect any very great sartorial surprises, but rather the development or discarding of ideas put forward in the autumn and early winter. As illustrating such developments I saw a delightful nigger velvet afternoon gown trimmed with a four-inch width of lace dyed to match and eased on to the plain tunic or overskirt with a semi-apron effect. A very successful evening gown was of pale lemon velvet, extremely severe in its long-waisted *corsage*, which was guiltless of sleeve, but with the skirt heavily embroidered in a deep orange and copper coloured design of "cape gooseberries," better known as "Chinese lanterns," a rather unusual but very effective ensemble.



A Selfridge model sports garment, the skirt of which unbuttons to form a cape.

For the rest, we are vastly enjoying an opportunity to wear the becoming accordion-pleated dresses again, and they are infinitely more serviceable than was at one time popularly supposed, since they will even stand being packed and unpacked with the utmost good temper, provided they are rolled and not folded. Of course, for those of us who are sufficiently blessed with this world's goods as to possess an elastic dress allowance the variety of choice this season becomes almost bewildering; but then it is also a simple matter to go to one of the *grands ateliers* and obtain the benefit of their taste and experience in making one's selection.

For those who are not so blessed, however, there are yet plenty of charming and reasonably priced garments to be found in quite small establishments by the woman who is safeguarded by a good knowledge of values and discrimination.

At Papillon's, 19, Hanover Square, I saw some inexpensive frocks, ranging between six and ten guineas. One particularly attracted me—a soft black satin with a draped overskirt and a vest of white georgette, embroidered with tiny black beads; a graceful garment suitable for a woman of maturer years, who is all too seldom catered for in the creation of model frocks. A number of rest and tea frocks were on view also, with simple corsages, beaded or slightly trimmed, terminating in the accordion-pleated skirt, all ranging round about the aforementioned figure. In addition, there were several simple gabardine and stockingette models for morning wear.

London, and indeed the provinces also, are to-day boasting quite a number of similar small establishments, which are among the good things which the war has brought us, since so many women have now no use for an idle life. Being debarred from such trades and professions as are held to be exclusively the preserves of men, they have determined to use their natural taste and business capacity in one of the few directions that are open to them.

It is a great number of years now since Switzerland became the playground of English people for winter sports, and much has been done to provide and design suitable clothing in which the fair amazon may feel free to enjoy herself, while yet assured of a becoming appearance.

Once upon a time the novice contemplating such a holiday was unwisely advised to take with her white sweaters for wearing as an outer garment for ski-ing, with the result that every time she had a tumble—and they are not a few in the early stages—the soft fluffiness of the wool collected a mass of snow crystals which refused to be shaken off. The wise girl will make up her mind as to what particular sports she intends to go in for, and will then select her wardrobe to meet these requirements.

Evening frocks, fancy dress, etc., are all of the same order that would be needed in England, though it is a good plan to choose them with a wary eye to packing,

since there are many thick and warm garments to be put into the trunk. Not only do these occupy a good deal of room, but they readily squash any flimsy garments in their proximity. For skating, the gayest colours that are becoming, knitted frocks and jumpers, can all be chosen light-heartedly, while short, but not excessively narrow, skirts are the most useful. The cold is a totally different sort from what we get in this country, and by mid-day, with the sun out, the skater may easily become too hot, so that her attire should be both light and warm. But don't forget an extra jersey or two for dull days. A stock of woolly and leather gloves also comes in handy.

For ski-ing, however, the needs are rather different. If a skirt is considered desirable it should be *really* short, and with a coat to match may be made of some smooth-faced material, such as whipcord or melton cloth. The coat should be made on sports lines, with good big pockets and a belt, and straps to confine the cuffs at the wrist. An alternative is to combine the two garments in a knee-length trench coat, which as a rule is equally becoming. In either case the outfit should be completed by breeches to match, puttees, and ski boots; while fingerless gloves, a coloured jersey, cap and scarf may be regarded as the final details.

A NEW AIR-COOLED CAR.

For shopping and general run-about purposes there is nowadays quite a useful selection of small cars. Amongst obvious advantages is the fact that they are easy to start up—a consideration in winter—and their abbreviated proportions make them particularly handy for a lady.

We have, upon occasion, instanced several cars of this sort, and a few days ago made acquaintance with yet another, the Temperino, a new Italian model of possibilities. While the Temperino is fashioned upon very up-to-date lines, it has an air-cooled engine of about 8 h.p., with two cylinders set V-style across the frame beneath the bonnet. It is claimed to give no trouble from overheating, and appears to possess plenty of power. There are three forward speeds and the customary reverse, all of the sliding type and substantial, Bosch magneto, and the transmission throughout is orthodox.

We found the springing particularly good—considerably beyond the ordinary, as a matter of fact, and the seats—naturally it is meant for two persons only—are comfortable and roomy. As one would expect in a car of Italian origin, it is stylish, conforming with the curved and sweeping contours that are now so fashionable.

Though we have not yet tested the car sufficiently to warrant a fuller endorsement of its merits, we have, nevertheless, received very creditable accounts of its prowess. It is stated to be a good hill-climber, pretty fast, for its power, on the level, and the sort of car you can take anywhere.

As to price, we cannot yet give the exact figure, but it will, we are assured, be moderate. The car can be seen and tried at Waldorf House, Aldwych, W.



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The Air-Cooled

Correspondents often ask our opinion of the Franklin. Here is a reply in the shape



Franklin Car.

of the views and experiences of a user of one of these unconventional vehicles.

By M. EDWARD.

IT seems strange that South Africa should be asked to give an opinion on and describe the Franklin air-cooled car. I have always heard that the Franklin Co. does not really make any cars for the export trade, and all the Franklin models in S.A. are for "domestic" use; they have the left-hand drive. There are only about thirty of these cars throughout the Union, all except one being five-seater touring cars. Although there are so few of these cars here, they are very well known, probably because of the excellent performances they have put up on many occasions.

In appearance the Franklin is distinctive and unmistakable. It has a peculiar type of bonnet, specially suitable for the air-cooling. Apart from the air-cooled engine the car has many other distinctive features, such as the wooden chassis, aluminium body and full elliptic springs. The engine is of 25 h.p., English rating, and as the car weighs only 2,400 lb., fully equipped with the tank full of petrol, it will be seen that this power is high, making the car being fitted with the usual three-gears, as is American practice) an "everywhere on top" car. The air-cooling operates as follows:

Each of the cylinders (six) has projecting from its outside wall fifty-two metal flanges, which extend almost the entire length of the cylinder. Around the flanges on each cylinder is placed a sheet aluminium sleeve, cylindrical in shape. These sleeves in turn form a connection with a sheet metal deck which horizontally divides the compartment enclosed by the hood or bonnet on top and the diaphragm on the bottom into two compartments approximately airtight. The flywheel is built with 64 vanes set into the metal

around its periphery (built in the form of a turbine fan to draw the air through the laminations of the cylinders).

The writer, who owns a Franklin car, has found the cooling to be all that is claimed for it—and South Africa is certainly a country to test any car. Although I have travelled only about 10,000 miles on my car, yet those miles represent country travelling under conditions that would be considered almost impossible in many countries. I have travelled over the "flats" of the Orange Free State, notorious for tremendous heat and bad roads, and have gone straight on where, with other cars, I have had to stop to allow the engine to cool, and add water. The wooden chassis idea is based on the principle that wood absorbs shocks while steel transmits them; and it is claimed that the Franklin frame is 65 per cent. stronger than a steel frame of its same weight.

Part of my work (pleasurable, I must admit) as a motor editor in Johannesburg is to drive and "sample" all new models and makes arriving, and I must say that the Franklin is the most comfortable car on the road I have ever been in. The actual seating position is not all that could be desired, being too straight, but one can do a longer journey over our rough country roads at a higher speed than with any car I know.

Although not actually a fast car—it will not travel above 55 m.p.h. without pushing—a better average can be obtained than with most, and it can be kept at 40 m.p.h. for long stretches over good, bad and very bad roads. The steering is of the reversible type that also makes travel over rough roads safer and easier because the front wheels are free to follow a beaten track without constant manipulation of the wheel by the driver.



The Franklin is of unconventional appearance. It is, however, a most comfortable car.



We simply draw attention to the large steering wheel and leave the rest to poetic imagination.

E**

An Oldsmobile

If any manufacturer wanted his car thoroughly tested out the best thing he could do would be to ship it to South Africa, with instructions to the driver to take a tour of a few hundred miles. At the end of the trip all the defects in construction would be "on top," and, acting on the experience, the manufacturer could then hand his car to the world with every confidence.

It was with the idea of demonstrating the Oldsmobile Six's adaptability to South African conditions that Mr. A. Williams, General Motors Export Co. representative, decided to take a tour through, from Johannesburg to Queenstown district and back, and asked me to accompany him. We did not start out with any idea of making a record, but just to prove all-round general reliability. We started out on a Saturday afternoon at four with a bag full of pennies for gates. We also had a couple of cases of petrol, as we anticipated a dry trip. The car was equipped with a fine set of tools and two spare Goodyear covers, besides the regular spare wheel. The road to Potchefstroom is now in excellent condition, and road gangs continue to improve the surface and direction. This highway is now taking on the appearance of a regular road, and is gradually



The luxuriously appointed Transvaal Automobile Club which was recently destroyed by fire.

in the Transvaal.

was fair on to Fourteen Streams. The road from Johannesburg to Fourteen Streams can be considered one of the best in South Africa, as there is no chance of losing the way, and only one dangerous sluit just outside Potchefstroom. This sluit has been in existence for years, and goes straight across an excellent portion of the road. We "took it" at about thirty, and all four wheels left the ground. This was the first test for the

Oldsmobile's springing, and the car took the jump wonderfully well, coming back to the road again without any suggestion of skidding.

From Fourteen Streams on to Kimberley the road is problematical, and no one seems to know really the right way to go. We inquired our way at the station, and were told that we could either go to Klipdam or across the drift (Orange River). No one could tell us, however, how deep the drift was, and the only information we could get was that "ox wagons went through all right." As it was getting late and dark we decided to try the Klipdam road, which, by the way, is not thoroughly marked out on any road map, but is just shown in dotted lines. It appears that there is no real road through this part of the country, which for thirty or forty miles is a wilderness of sand, stones, and bushes, with hundreds of roads branching off and wandering through the bush in all directions. The reason for all these roads is that they lead off to the diggings. These diggings are dotted about all over, and many of them are disused. We were fortunate in meeting many natives while wandering along these paths, and although we did not stick to any regular road we managed to keep the right direction.



Looking over a vast stretch of country from Windvogelberg, near Cathcart.

giving up ideas of winding aimlessly over the veld. Potch was reached at 7 p.m., the distance of 74 miles having been covered in 2 hours 35 minutes—very fast travelling. We left at 9.25 the next morning and travelled through Klerksdorp, arriving at Wolmaranstad in time for lunch, and leaving again at 1.50 p.m. The road continued to be excellent all the afternoon until we got to Christiana, and



Bad surface at a drift near Bloemfontein.



The one of the inevitable gates, the frequency of which makes motoring tiresome and slow.



A combined road and railway bridge near Queenstown.

This road can be called really dangerous, as in parts it is a mass of sharply-pointed stones, and at other times runs into unused diggings without any warning. We were travelling on one rather good stretch when we had to stop suddenly to avoid dropping the car into a digging that ran right across our path. It took twenty minutes' search in the bush to find the continuation of our road, and this is where we first found our spot-light a godsend. The next trip that either Williams or I take we are going to have two spot-lights—one on the passenger's side for him to work.

We got through to Klipdam at last, tired, and thinking (and perhaps trying to say) unutterable things about the "road," but determined to push on to Kimberley. We found the road from Klipdam to Barkley very good, and from Barkley on to Kimberley was a wonderful stretch for us after what we had gone through, although it was a bit patchy. At 12.15 a.m. we travelled into Kimberley, searching for a meal, and as luck would have it found an all-night café right away, and were soon busy on two huge platefuls of steak and eggs and chips. After this we went straight to the Belgrave and bed. I must mention that Williams had driven all day, and he must have been mighty tired. We found out the next day that the best road was across the drift at Warrenton, and that the river is easily fordable at this time of the year. So we can confidently advise all travellers to take this road in the dry season rather than travel the way we did. Any motorist will get tied up on the Klipdam road as sure as fate, even if he has been over the road before.

We stayed a couple of days in Kimberley, and during that time had an opportunity of getting an idea of the motor trade. Petrol was very short, but otherwise things appeared to be pretty brisk. While there I caught a

glimpse of the two Packard cars that De Beers imported from the U.S.A. recently. We managed to get a couple of cases of petrol, so started off with that "the world is mine" feeling. We left at 7 a.m., and after one fairly long stop to make sure of our way from Jacobsdal, arrived at Jagersfontein at 12.47—just in time for lunch. The road from Kimberley to Jagersfontein is wonderful. There is about 104 miles of it, the greater part being well made and kept in perfect condition. At 2.15 we left for Springfontein, and passed through huge herds of game on either side of the road. The country was literally alive with game, and must have looked something like it did before the diamond rush in the old Voortrekker's days. There were blesbok, springbok, sable, and other species we could not quite place in the distance. They were fairly wild, and travelled fast and far on the approach of the car.

We passed through Springfontein and went on to Bethule, where we spent the night. The roads had been good from Jagersfontein and made my day's driving pleasurable. The sun was mighty hot during the afternoon, and I was pleased that I had brought my "San Diego" hat—the broad-brimmed hat that Williams had threatened to lose for me on the trip. We eventually got into Jo'burg with a feeling of confidence in the car. The Olds. had proved itself, and for general reliability and comfort had put up a grand performance. The springing is noticeably easy on the driver and passengers on a long journey, making driving comparatively easy and untiring. Generally speaking she is a fine little 'bus, with ample power.



The Oldsmobile on which the trip was made.

Specially noticeable was the absence of all annoying squeaks and rattles, due, no doubt, to the excellent composite body-work. Our running time was 64 hours and 13 minutes for 1,334 miles. No time was deducted for gates.

Sports Men & Women



Viscountess Uffington takes charge of a bob-sleigh and a merry party at St. Moritz.



Mrs. and Miss Mason at a recent meet of the Pytchley.

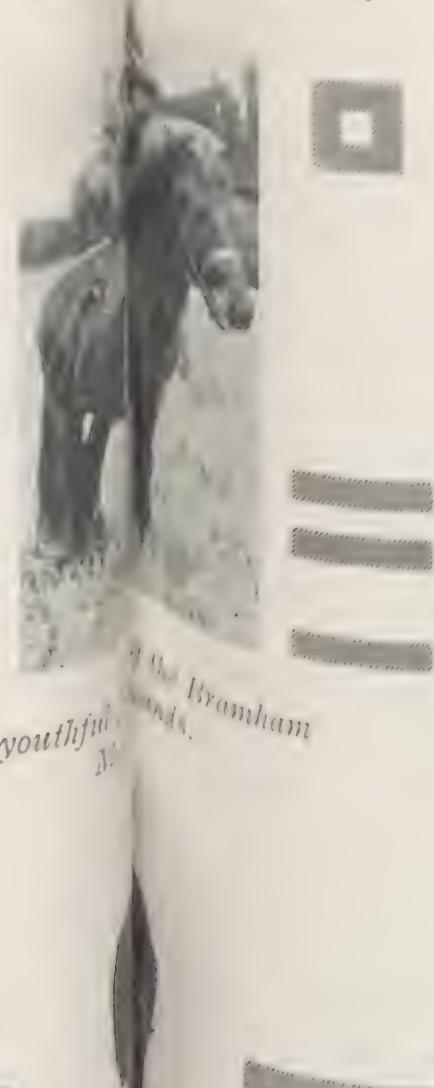


The Hon. Joan Poynder likes a strenuous life.

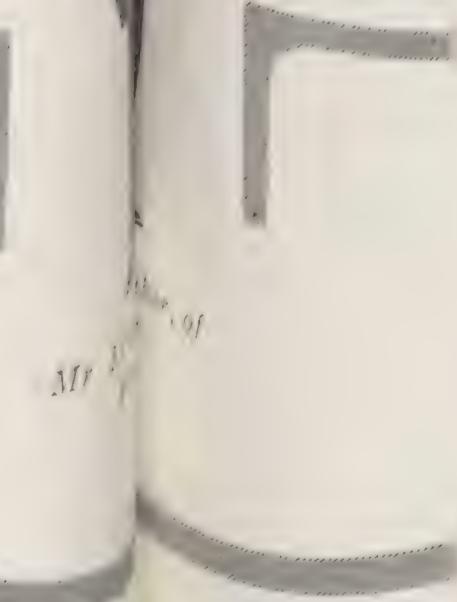
Hunting and the following of winter sports are unfortunately



Curling may be a dying sport, but Sir George Gibb is here still.



A youthful Mr. Bramham.



Mr. [unclear].

We Have Heard About

somewhat opposing pastimes,
but each has its devotees.



*Curling may be a bit like it at Mürren.
Sir George Gibb is here seen in it at Mürren.*



A youthfully mounted Bramham



*Lord Orkney off to a
meet of the Whaddon
Chase Foxhounds.*



*Sussex recently played America
at Hockey, Brighton being the scene
of the match*



*Lady Cynthia Mosley
also takes to the skis.*



HOW IS IT DONE?

(Exclusive Illustrations by "The Motor-Owner.")

The Why and the Wherefore of this frequent query regarding the low price of the Cubitt Car.

HOW is it done? This is a remark which is heard freely in connection with the Cubitt car. It refers to the relationship existing between what one pays and what one receives for that payment. In a few words the balancing factors are £442 and a handsome 4-5 seater touring car complete with electric lighting and starting apparatus, hood, wind screen, four-cylinder engine, four-speed gear box, and worm drive back axle. Under post-war conditions the price is admittedly remarkable. In conjunction with other folk, THE MOTOR-OWNER held this opinion and decided to investigate. Let us in imagination, therefore, take you round the works and tell you "how it is done."

To deal with generalities first, the works are situated at Aylesbury, with a subsidiary plant in London. One could not help observing the contented appearance of the whole staff. Good wages are paid and a satisfactory bonus can be earned by all who are willing to put in a good day's work. Wherever one went there was a contented look—alike on man, woman, or child. An important factor in the organisation is certainly the happy labour conditions which obtain, persistently fostered by Mr. E. May, who is in control of the works as joint managing director with Major Dodson, who is primarily responsible for the sales organisation, etc. Another important factor in keeping down production costs is the elimination of all unnecessary overhead charges. The third point which appealed to us was the scientific organisation of the works, which are so arranged that every facility is provided for the employees to turn out a maximum output with minimum physical exertion.

LABOUR-SAVING DEVICES.

An outstanding feature of the works organisation is the ample provision of efficient labour-saving appliances. In

passing through the raw materials shed one notices how the platforms, cranes, railway tracks, and inclined carriers are all arranged to minimise personal exertion in handling the various articles. A rough inspection of the goods received is made immediately, and the articles passed are then conveyed to their destination by light railways. Castings, for example, are taken straight away to the pickling vats; other goods are binned in the stores. In connection with the work so far indicated there is a Rectification Shop. That phrase is good—distinctly good. The

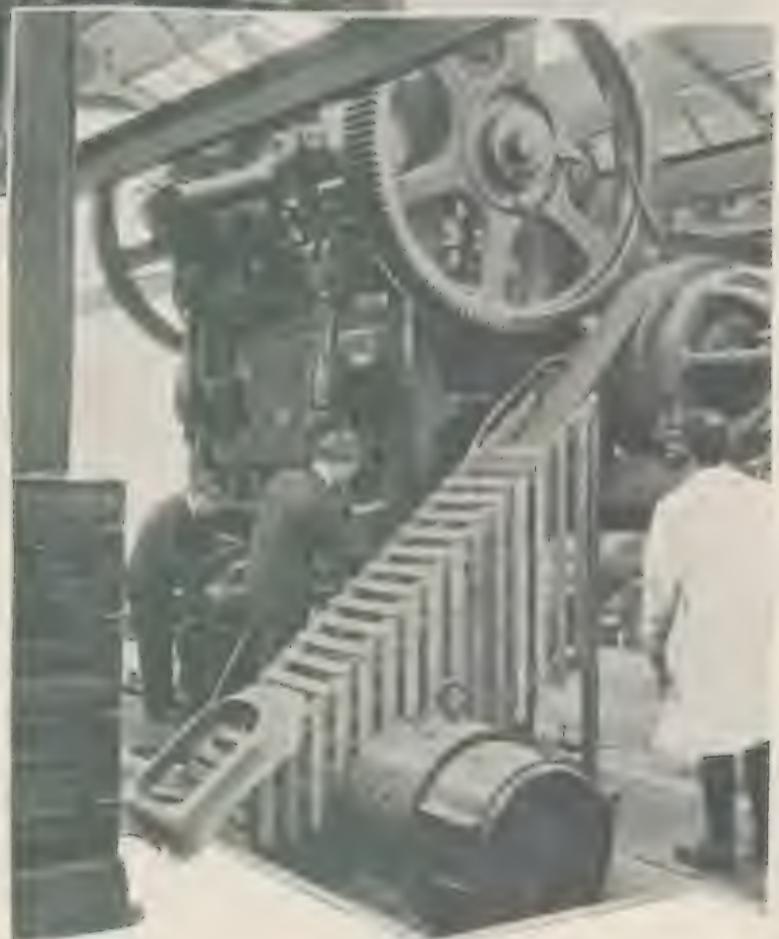


Mr. E. May, who is responsible for the fine organisation at Aylesbury.



A battery of drills at work on a Cubitt cylinder casting. The work is carried on the light railway that is a feature of the factory.

Above (right), some of the latest machines with which the factory is equipped throughout.



A wonderful press. It is such machines as this that make possible the low price of the car.

The final essential is, of course, a large output, which at the time of our visit ranged between sixty and seventy cars a week, anticipated to grow to about a hundred in the early part of this year. So much for generalities. Now let us examine some details.

scheme is also good—distinctly good—and permeates the whole procedure of the works organisation. Whenever a small defect is discovered, the article, whether it is a casting or a complete engine, goes straight away to a Rectification Shop. The obvious result is that no such small defect holds up normal production. The rectification is the special job of specialists in the Rectification Shops. So soon as any little defect is encountered the article ceases to have an entity in the normal scheme of production, and is sent straight away to be put right (or, if necessary, to the scrap heap) and then re-enters the scheme of routine at the precise point where it should be had the defect not materialised.

CLEVER JIG SCHEME.

The machine shops are all arranged in bays with batteries of tools of a kindred character for doing the allotted work. For example, one early encounters a splendid bay of milling machines all grouped scientifically so that the work proceeds step by step. From start to finish of the works, the whole of the machinery is of the very latest pattern and of the highest grade obtainable from the various markets of the world. The method of handling cylinders and crank cases is particularly instructive. Picture a long line of machines going up and down the length of a shop. Running underneath the "business ends" of all these machines, visualise a light railway connecting from end to end with the necessary turn-tables at the top. Now let us machine a crank case in imagination. From an overhead travelling crane the rough job is lowered into a jig mounted on a small truck. Now before that crank case can start its career in real life we have a lot of work to do to it. To take a few examples, we have many holes to drill here and there, we must make a smooth face for the joint, and we must bore out the bearings to take the crank shaft bushes. Each machine in the long line does one particular job and that job only. By merely turning a handle on the jig the crank case is turned this way and that so that it comes automatically into the right position for receiving the necessary attention at each machine. When the first job is done, a gentle push wheels the truck on to the next machine—and so on until the job is complete. When the crank case starts on its little railway trip the foreman can tell you within a minute or so when you can have it off the other end and see it bolted up in position on the corresponding part which has been produced elsewhere in the works. This scheme is really clever.

The erecting shops all operate on the unit principle. That is to say such items as engines, gear boxes, back axles, front axles, frames and wheels are erected in specified areas. The various units then pass to their respective inspection depots and then congregate in due order in the chassis erection department. There are two points in this erecting scheme at the Cubitt works which appeal to us as more than normally sound. In the first place the production of finished parts is constantly maintained at a rate of 200 in excess of the chassis erecting department's requirements. There is thus a wide margin of safety to guard against the possibility of a hold-up in output and



One of the turn-tables in the light-railway system.

delivery through shortage of any particular unit. A car is obviously only of value when it is completed. If everything else were done, for example, it would still be useless without a clutch pedal or the final drive bevel pinion. The second point is the use of Shortage Lists. When you go into a foreman's office you see a Shortage List conspicuously displayed. It schedules all the particular parts for the production of which the particular foreman is responsible. If the production of any part falls below the 200 safety limit margin, a large red mark is put against that item. He can't fail to see it. It is his job in life when such a mark appears to see to its speedy cancellation. He does his job. We noted two red marks during the morning, but in the afternoon the Shortage Lists reported "All Correct."

CHASSIS ERECTING.

As everywhere else, the chassis erecting department gives evidence of careful study in organisation. The frame is slid on to a raised gangway the height of which is suitable for get-at-ability in the work. The back and front axles are dropped into position, each unit being fixed by specialists. The frame is slid along from one set to another as it grows in completion. When the wheels have been fixed the gradually growing chassis is slid to the end of this gangway, which is arranged to revolve so that the chassis comes on its own wheels and is then pushed away to another department. Here the other units are dropped into position from overhead travelling cranes. The engine is lowered into position, then the gear box, and so on. From the time the skeleton frame is started on, eight men can complete the erection of the chassis in three-quarters of an hour. Admittedly that is quick work.

When erected, the car goes for test in the usual way. If any little defect should materialise, it goes back to our old friend the Rectification Shop! Nothing is allowed to impede the normal routine of production.



Eight men can assemble a chassis in three quarters of an hour.

MY LOG-BOOK.—By HERMES.

IN all probability there will be no Marine Motor Show next year. It is proposed to incorporate it with the car exhibition.

TO be first out of six hundred competitors is no small honour, yet it fell to a Cadillac in the recent Swiss hill-climbing contest. The car was fitted with Nobby Tread tyres.

OWING to ill-health, following upon the bite of an insect, Sir W. Yarworth Jones, well known in connection with the Victor tyre, has had to resign from business.

THE *Austin Advocate*, issued monthly by the Austin Motor Co., is a bright and readable production. The last issue gives a series of very useful hints and other information that might well be studied by all motorists.

STANDARDISING tyre sizes is admittedly important. Much good work of the sort has been done by the British Rubber Tyre Manufacturers' Association, 11, Ironmonger Lane, E.C.2, whose suggestions have been adopted by the British Engineering Standards Association.

FOLLOWING the recent criticism of A.A.-appointed garages in *The Times* the A.A., so they inform us, sent a reply stating their case—viz., that they investigate such complaints promptly and take the necessary steps impartially. The letter did not, however, appear.

THE car's electrical system is something of a mystery to many people. It need be no longer, however, if they read the 100-page booklet produced by the Rotax Motor Accessories Co., Willesden Junction, N.W.10. Both wording and illustrations are admirable and interesting.

THE National Benzole Co. are rightly pleased that they have been awarded the "Dewar" Challenge Trophy as a result of the 10,000-mile trial of their fuel under R.A.C. observation, a performance that was stated to have been "the most meritorious performance of the year in certified trials."

WITH the new year many motorists will be thinking of insurance. Worth perusal are the booklets issued by Premier Motor Policies, Ltd., Glebe House, Sherborne Lane, King William Street, E.C.4, whose policies are claimed to be particularly inexpensive, as well as offering advantages such as insurance of an owner's garage, etc.

SWIFT cars have a lengthy and reputable history, whether as the outcome of that 50-year old bicycle-building company, the Coventry Machinists' Co., or for its relation to the enterprising Harper-Bean amalgamation. One learns quite a lot that is of more than usual interest from the profusely illustrated brochure, *Swift Cars and Their History*, which can be obtained from the company at their Coventry address.

I HEAR that many people are anxious to know where to get the holders required for the new motor licence cards. The following firms have informed me they can supply them: Messrs. Joseph Evans & Co., Liverpool Street Mills, Birmingham; Messrs. A. J. Dew, 21, Endell Street, Long Acre, W.2.; Messrs. S. Smith & Sons, Great Portland Street, W.1.; and Messrs. Wright & Son, Edgware, Middlesex.

THE exigencies of space unfortunately prevented us from dealing with coachwork as fully as we intended in our Show number. Amongst carriages that deserve commendation is the new Maythorn body, which, as we all demand increasing comfort nowadays, is peculiarly interesting. It aims, in fact, at providing a carriage which can be used either as an open tourer or as a limousine. And a very welcome dual purpose, too, yet not an easy problem, as motorists have already discovered. But that is no reason why one should be daunted—the Maythorn people weren't, anyhow; and little as I know of the technical side of coachbuilding I could nevertheless appreciate their work from that ultimate tribunal, the user's point of view. On the one hand, it is a really good town carriage, altogether in keeping with the firm's reputation. Yet, in 27 seconds or so, you can transform it, and easily, into a real open car—the very thing one needs with our "quick change" climate. When I tested it I expected squeaks and the other drawbacks so often found in dual purpose bodies, but I was agreeably disappointed. Every weakness has been provided against. This body merits close study, if only for its enterprise.

WE have recently had several enquiries respecting the Campbell Company's address. Will readers please note that it is no longer 16, Gloucester Road, S.W., but has, for the purpose of securing better organisation, been changed to 56, Knightsbridge, S.W.1. The telephone number is Victoria 1126, and letters should be addressed c/o Messrs. Dobson & Smith, Ltd.

SPEEDOMETER SMITH & SONS are issuing quite a ^{good} little booklet describing their various useful accessories. It is the sort of thing that you can find time to read, because it contains a good deal more than the fulsome eulogies one so often peruses with tongue in cheek. Of course, it tells you about their specialities—that's just what it is for—but it tells you nicely, with plenty of pictures to brighten the pages, and several humorous stories that beguile you onwards. *Roadcraft* is well worth getting hold of.

JUST now we are hearing quite a lot about the "wasters"—those people with an inflated genius for procrastination and a singularly marked acquisitiveness. However, Whitehall boasts a real oasis as I discovered the other day. I was in quest of light upon the forthcoming motor regulations. Calling at the Ministry of Transport's offices I was promptly ushered into a real business department where an urbane and courteous official, Mr. H. E. Redmond, gave me the necessary information *instanter*, to my very *agreement*. What I learnt is given *in extenso* on another page in this issue.

A DECIDEDLY ambitious test is now taking place of the 30-40 h.p. Spyker, which many of our readers must have noticed at the recent motor show. The programme is to drive it, under the observation of the Royal Netherlands A.C., over a distance of 55 miles daily, till the car has covered 19,000 miles. For nearly five weeks the engine will run day and night without stopping. Only halts the car will make will be for tyre-changing and filling up with fuel and oil. Already the car has covered a considerable mileage, and has evidently every prospect of successfully completing its strenuous undertaking.

THE new Road Bill is not exactly happy. At any rate the Motor Legislation Committee have got upon their hind legs over it. For one thing it appears that roads we have to pay for maintaining may, under its powers, be closed to us. Pretty bad that, but what is worse is our being under "Orders in Council" which, the M.L.C. state, "places supreme power in the hands of individual Ministers." Far worse, however, are the penalties are liable to in future. For example: a dirty number plate (proposed licence card), first offence, £20; second, etc., £50 or 3 months! Misleading declarations *re* licences bring £100 or 3 months as their penalty. Well, the sooner that French profiteer gets his Mars-seeking rocket ready the better.

TO have the courage of your opinions is said to be estimable; at any rate it's the way to learn. So the Goodyear Tyre people think, for a little while ago they invited me and other critics to a test of giant pneumatics. The experiment went off well enough, though lack of time prevented its being as complete as intended. An A.S.C. lorry, weighing rather more than seven tons loaded, and a Daimler char-à-bancs were employed, the former with 9-inch giants on the rear and 8-inch on the front, the "char" with 8 and 6-inch tyres respectively. There was an unmistakable improvement in comfort in both, the steering was easy, and thirty m.p.h. was well within even the lorry's compass. Altogether a very successful experiment.

S TILL another road-side fuel station has been established. Situated at Offham Siding, adjoining the main London-Maidstone road at Wrotham Heath, it has been erected under the aegis of the R.A.C. to supply benzole to motorists. In other directions also the Club is very active; in fact it achieves a great deal of quiet work behind the scenes for which it does not get the thanks that are due. Amongst these is the touring department, which is particularly busy just now arranging overseas tours for its members. Quite a large number of people are enquiring about trips in Algeria and Tunisia, and the R.A.C. make an excellent suggestion in advising travellers who are not staying more than two or three weeks in those districts not to take their own cars with them as the cost of shipping them between Marseilles and Algiers is very heavy—in some cases nearly two thousand francs. It is far better to hire a car on the spot, of which several good makes are available, with drivers who know the country.



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"The Sphere," Nov. 6th, 1920.

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THE FIVE SHORT HOLES OF WORPLESDON.—By E. H. D. SEWELL.

A Round on the Course Chosen by the Ladies' Golf Union "because it is too difficult for them."

ARECENT correspondence in the *Times*, which amounts to an appeal for the poor man who wants to play golf, has touched me on the raw. I feel that I have been detected on one of the three days per annum upon which I allow myself the privilege of assisting the drainage system of whichever golf club permits me to hack my way through its green. Divots! Why, if I stopped to replace divots, I'd never get to the turn. To be honest, I find my divots are of the irreplaceable sort. They look more like a hen pheasant who has somehow got into the centre of things at short range, and I sincerely hope no greenkeeper, or architect of the Colt-Croome-Fowler-Alison brand spots me at one of my furtive replacings. For that, I feel sure, would be my last day's golf.

To return to the correspondence in aid of the poor. Having read somewhere therein that golf clubs were sinning to the extent of laying in choice wines from far Cathay as an adjunct to their lunch menus *bien choisis*, I hoped that Worplesdon belonged to this vicious circle. Alas! at the umpteenth or somewhere, my host said ruthlessly (we being goodness knows how far from the anticipated Lucullan feast and the Courvoisier '69), "Now we'll go in to lunch at my place; better than the clubhouse, y'know." So that was that; and I can't tell you if the food at Worplesdon's fit to eat, or the Madeira was corked, or whether, with reference to the aforesaid correspondence, you could have cut the atmosphere with a niblick. And I'm deafish with my niblick—as, indeed, a three days per annum "gowfer" should be.

So we just meandered round, he never off the course except to look for my ball, and I never on it except to take bad photos in a light like London when she wasn't a bit afraid of the Zeps.

However, I meandered enough to notice that if Worplesdon is not famous for its five short holes it ought to be. I liked the "Pond" hole, not only because I happened to hit the "good, firm mashie shot" of the guide books, and nearly bagged a moorhen at the other end as well, but because Mr. Plus Four Brecks went flop into it with a floater. It's always worse hitting into a pond with a floater, because you've got to jolly well go and save your ball, just to

show that golf is a poor man's game after all. And this luxuriously appointed course—that's one for the correspondence isn't it!—has a punt moored under the bank for the use of Old Blues, and others who sign themselves such whether they were at Christ's Hospital or not.

Another hole which I thought a beauty, and am assured by all the *savants* that I am not far wrong, is the twelfth—a two-shotted. If you get a fizzer from the tee, one that Tolley hits when feeling well, you have still a full second through the opening to the left of the white house. And golf's greatest joy are two clipping shots at a two-shotted. That accomplished, you can have all your forehand top spinners at Wimbledon, and "hooks"

off middle-and-off at Lord's—that is to say when purporting to write about golf!

But, now I come to think of it, I'm not so sure the two-shot 17th is not a better one than the 12th. To all and sundry who don't know their Worplesdon, let me offer the key to this problem. It is just this—that you must place your drive to the right; then you have opened the door. I know, because I had Mr. Plus Four Brecks stone cold, owing to his hook. And here I may also give what appears to be the guiding principle on this beautiful course. The tee shot must not only be hit, and hit well; it must be placed *every* time.

The tee shot at the 5th is the best in Surrey. You can only state this after you have played over all the other links in Surrey, from Raynes Park downwards, as I have, and spoken to most of their greenkeepers. The man who plays every day at Worplesdon tells me the tip

here is to hug the heather on the right closely, but not too affectionately, since it has a somewhat all-embracing character. One of the most famous of the quintet of short 'uns is the "Horseshoe" hole, copied exactly for the Millionaires' golf club in America, where they carry their own clubs and have no time to write about the expense of golf. If you are bunkered here, you are bunkered the sort of hole Herbert Fowler would like to be buried near.

Place aux dames. Anyway, the Ladies' Golf Union thinks Worplesdon is a good place for them, as they have pitched their tent there and are reputed to like the course because it is much



The approach to the 12th green a magnificent "two-shotted."



The entrance to the Club House.

too difficult for them. That is not my opinion. Under the somewhat unnecessarily drastic regulation in force to which ladies who wish to possess a handicap have to bow, or do without, it follows that some are debarred from playing in competitions. But competitions and pot-hunting are not the soul of golf, certainly not in such beautiful surroundings as those at Worplesdon, which harbours that very fine player the English Champion, Miss Wethered. The men's side of the membership is not lacking in strength. A club that plays Worplesdon may find against it R.H. de Montmorency, R. Harris, Major H. D. Gillies, Bernard Darwin, that fine old crusted foursome player Arthur Groome, Captain C. N. Ambrose, who halved with Tolley in November, R. Wethered, captain of Oxford, and George Brann, who has found one field where he *can't* score centuries. Mr. Plus Four Breeks had the battle glint in his eye when he picked this team for me. As well he might.

It is extraordinary what a number of folk do not seem to know where Worplesdon is. In this age of overmuch education this is surprising. I once heard it described as cheek by jowl with a cemetery, but though the description has its points, it would be fairer to add that you can't see the cemetery for the course, and also that after your average effort at the tee confronting the "Pond" hole you feel that the proximity of a cemetery is no bar to a golf course. Indeed, on those occasions it comes almost under the heading of a luxurious appointment thereto, everything necessary being at hand, so to speak. Actually four railway stations are available for the course, to wit, Woking, Brookwood, Worplesdon, and Guildford, with its crazy taxis. It is better when setting out to play at Worplesdon to fix up your taxi at one or other station beforehand, and ask for one "with wheels preferred." The course is sandwiched in between two other excellent links of Woking and West Hill, and at the present rate of progress there seems to be a prospect of a golf course per hamlet in Surrey, when we shall no longer wonder at the solitariness of the extremely able golfer who is a porter at Surbiton station, and good enough now to play his part in any London Club Foursomes, for then it will be the man who does not play golf who will be an object of curiosity. Of course, in an ideal land like ours, where everything is always for the best—or we are told so—no man under thirty ought to be

A view of the Pond Hole at Worplesdon, from the tee.



The fifth—a typical Worplesdon undulating green.



The Clubhouse Verandah, whence a fine view is obtainable.

allowed to play golf. Rugby football is the exercise for all healthy young men whatever the plus of their knickers, but there is a sufficing argument against any such sweeping rule, and that is the dearth of Rugger grounds. This is no new thing. It was bad enough long before the war to cause the Rugby Union to go so far afield as the desert of Twickenham for their G.H.Q. Nobody can blame the R.U. for not doing their utmost for golf; by selecting Welsh trained players and South African birds of passage for the National Fifteen they tacitly encourage the old boys of our Rugger schools to turn to something else. All of which, of course, *has* to do with Worplesdon who, along with all the other golf clubs, catch their members younger in consequence. One straw shows which way the draught is, and I never see Tolley without wishing he had postponed his "arrival" on the links until several years after helping Oxford to win four times at Queen's.

HUMBER COACHWORK.

THE Humber Motor Co. are to be congratulated on their new interior-drive saloon body which, we were informed at the time we inspected it, is to be the standard carriage for the 1921 15.9 chassis.

Very distinctive, this saloon body represents no little skill, careful planning, and accurate craftsmanship. In excellent taste in prominent portions it is in excellent taste throughout, whether you examine the gently curving contours of the domed roof and tastefully rounded back, the happy manner in which the dash avoids an eye-paining interruption of outline, or the various fittings that minister to comfort and elegance alike, you, as an epicure, are impressed and appreciate.

Below the window level a soothing tone of very deep blue predominates, in soft contrast being the particularly sparkling black of the upper portion. Objectionable rectangularity has been markedly avoided in this car, and even the hiatus due to a flat windscreen, so often an eyesore on elaborate *carrosserie*, has an opportune substitute in a V-fashioned wind-deflector.

Matching the exterior in elegance, the saloon's interior is eminently attractive. Again blue predominates, in the rich, warm Bedford cord upholstery, gracefully patterned in lighter shades of the same colour, and in the silk, readily adjustable spring blinds.



ON WIZARDS &

CHURCH bells peal out, engines whistle shrilly, and hooters and sirens compete vociferously with one another. We wait in breathless silence. A moment's pause, then up goes the curtain, the performance has begun. Time—that most mysterious and all-powerful of wizards and conjurors stands before us in the centre of the stage, hat in hand, making his bow. Needless to say, on this occasion his hat is a top-hat, beautiful and new, and in large white figures round the crown is written "1921." Oh yes, we have all been to these performances before, ever since we can remember anything at all. In fact we can never manage to stay away, either the youngest or the oldest of us.

The Wizard himself must be very aged, no one knows quite how old, but he never seems to look very different, and every year this performance of his takes place—ever



An easy way of proceeding to the ski-ing ground at St. Moritz.

"Old, yet always new, so that no one knows what is coming next, whether it will be tragedy or comedy. He has but to tap the hat with his wand, and out of it will come—no, not a white rabbit! that only happened at children's parties at Christmas, when one sat side by side with small cousin Jim in Uncle Roger's drawing-room, and then one was led subsequently to make desperate and not wholly successful experiments with the said uncle's "topper" and the gold fish in default of a rabbit.

No, the Wizard's game is of a bigger order than that. He tumbles Prime Ministers, and Princes, Miners and Sinn Feiners, and all sorts of people and things out of the depths. In 1914 he suddenly let loose a terrible and cruel spirit called war, and since then, alas, there have been many empty



A smart costume for ski-ing.

WINTER SPORTS.

places among the audience, though some people have rather forgotten about it now.

But though the 1921 hat makes us a little apprehensive, perhaps, at least we can be optimistic and brave hearted. It is an old proverb that "Faint heart never won fair lady," and I suspect it never won anything else worth having either. Still, talking of "fair ladies," one must admit that here at any rate the Wizard is giving the audience a good run for their money (and probably chuckling in his own magic manner up his sleeve at the same time).

The eternal Eve has never appeared in the same guise two years running. How subtle are the changes! And yet, since even the comparatively recent days of the Victorian age—well, the Victorian lady would be not a little astounded if she beheld her great-grand-daughter taking a degree in cap and gown, not to mention more unconventional poses, motor overalls, for example.

A few people are regarding this evolution with some misgiving, and in their heart of hearts at any rate consider the great-grand-daughter a dangerous person and a menace to male privileges. Yet they really need not get agitated: as long as men are Men, women will be only too glad to be Women, all the world over, even if they do go about with their eyes open, and claim an equality of opportunity with their men-folk in the world's work and play. Those who fear that these innovations portend a phase of masculine women, or even the caricatured "suffragette" type, can lay aside their anxiety; the fashion has long since died out, and the pattern is becoming as obsolete as the Dodo.

One could perhaps wish that other social evolutions might be achieved as gracefully and with as little disturbance to



It's never too cold for motoring!

the community. Still, now that life has become so dreadfully complicated, men ought really to be jolly glad that women are so capable and keen to take a share in things. What with rates in some districts at £1 in the pound, and increased railway fares, and strikes (to lessen the cost of living, of course !), and all that kind of thing, it looks as if we shall be reduced to living in the car, *en transport*, so to speak, like the gipsies, to avoid trouble ; only, with the cost of petrol too, we may have to sell the car first to pay for it.

It is not unlikely that anyone who can still pull a few odd notes out of the bank will make a dive after a holiday out of England this January, if only for a week or two, as a "breather," to fit them for some of the problems that already show signs of emerging from the 1921 hat.

For that sort of holiday there are few places that can really compare with Switzerland. There are still a number of people who appear to think that a holiday in Switzerland is only for the very strenuously athletic, but that depends so very much on the selection of one's village and hotel. For a largish party, where ages and tastes may be divergent, it is a good plan to choose a small village somewhere within reach of a big centre, for then people who are strenuous can lead the simple life, while those who, being less athletic, require amusement in another form, can obtain it without much difficulty and enjoy the carnival gaiety of resorts like St. Moritz.

After all, apart from the glamour of actual winter sports' life, who can resist the thrill of pleasure on beholding from the railway carriage window the first real Swiss cottage, with its quaint little shutters and long sloping eaves to the roof, tucked snugly away under the lee of some snow-swept mountain ? Or who, on waking up the first morning, can watch unmoved the miracle of sunrise, waking the great chain of peaks from dull grey sentinels of stone to the most exquisite and magic rose of dawn—a creation as wonderful as the legend of Galatea ? Oh, no ! There is no other holiday ever quite like it, with its infectious feeling of youth and activity, and the stimulating crispness of the air. Truly it is a case for the old cavalier song :

" Pack clouds away and welcome day.
With dawn we banish sorrow."

One word to those whose holiday is of short duration. Go high enough !—for even in Switzerland there have been known mild, wet spells in January. And then, indeed, the mysteries of fairyland are reft and shorn of all their wonder, and we are left to gaze at the old stage scenery without the glamour of the lime-light. Almost enough to take us back to



A little of this sort of thing would brighten up an English winter.

the " flask of wine " is apt to prove very welcome indeed in our wilderness. But who cares, anyway ? For the sun has started once more on his voyage back to us ; and, by the way, if we are really out for amusement, there is usually a quiet smile to be obtained at the Wizard's expense. That must be the worst of having such a large " cast " for a performance, and I rather suspect he gets occasional surprises himself ; as, for instance, when Jack Frost utterly refuses to " come on " for the Old-Time Christmas effects, and stays sulking in the wings till about April, when he suddenly dashes on and spoils the " Spring Dance of the Fairies in the Blue-bell Wood," a highly tricky affair at the best in these prosaic days. Of course, the Wizard, poor beggar, in order to keep up his reputation as a magician at all, has to pretend that it was all meant to be, and then naturally everyone grumbles and says that the show was a better one when *they* were young.

Ah ! well. We all have our troubles ; but perhaps it is not a soft job being a Wizard, after all.

LEN.

FORTHCOMING FORD CHANGES

DURING the past few months the Ford Motor Company (England), Limited, of Trafford Park, Manchester, have greatly improved their various models in minor details, and we are informed that further important changes are pending, notably in the bodywork of the touring model.

An entirely new bodywork is to be fitted ; the change may be made any day. The new touring body will be more of the popular torpedo streamline shape, the lines rearward being made from the rear top of the bonnet or dash. This will make the bodywork lower throughout by some four inches or more, and the seating will be lower in consequence. We understand that the two-seater will be discontinued.

Over the top and the best of luck ! Captain Fansley and Miss Graham Moon at St. Moritz.



England by the next train.

Still, even in this old country, occasional weekends are available for perhaps the busiest of us, and it is a pleasant sound—the crisp hum of a studded tyre on a dry road. The trees may be leafless, but the sun catches the light powdering of white frost, and the little stream scurries merrily on in competition with us.

Of course, if we do take lunch with us it is a bit cold, and we cannot dally with our " loaf of bread beneath the bough," and

".....I averaged 33 miles per gallon"

Economy of consumption and consequent moderation of maintenance costs are distinguishing features of the Sunbeam, as the following characteristic letter from a Sunbeam owner clearly shows

Extract from letter :

"It may be of interest to you to know that I covered 2,500 miles on this car last month, making a total of 15,000 miles since I received it last year, and as yet have had no trouble with the engine at all, which has only been taken down once to be de-carbonised after 12,000 miles.

"Also on a 200-mile run I averaged 33 miles per gallon on pure benzol with a 220 jet and extra air inlet."



SUNBEAM-COATALEN AIRCRAFT ENGINES

The SUNBEAM MOTOR CAR Co., Ltd., WOLVERHAMPTON

Manchester Showrooms : - - 106, Deansgate
Southern Service & Repair Depot : Edgware Road, Cricklewood, N.W.2
'Phone : Willesden 3070. 'Grams : "Sunoserv, Crickle, London."
London & District Agents : J. Keele, Ltd., 72, New Bond St., W.1

GAILLON HILL CLIMB

At this annual event, the Derby of the French Hill Climbing contests, at which all the best continental cars are entered, the Sunbeam beat all records, climbing the hill, a gradient of 1 in 10, at 109 miles per hour.

16 h.p. 4 cyl.
Limousine
Landaulette



THE SUPREME

SUNBEAM



**GOOD MATERIALS
ESSENTIAL
TO GOOD QUALITY**

In war times first-grade materials were unobtainable. Long Staple Egyptian Yarn was one of them — an absolute necessity for making reliable tyre casings.

Today, supplies of this high grade Cotton are again available for the manufacture of "Clincher" Tyres.

The importance of this special material can be judged by the super-service of pre-war "Clincher" Tyres—a service once again assured to all motorists who equip with Clincher Tyres.

"**CLINCHER**"
NORTH BRITISH
Motor TYRES

THE NORTH BRITISH RUBBER CO., LTD.,
EDINBURGH, LONDON & BRANCHES

A RUN ON THE NEW PEUGEOT.

We found the Peugeot to be a car of solid, enduring worth rather than of spectacular capabilities.

PEUGEOT has been a name to conjure with almost ever since there were motor cars. It is one of the pioneer makes, and one that has been unfailingly good throughout the years. Nobody was ever let down by a Peugeot yet—at any rate through the Peugeot's fault—and it is fair to presume that no one ever will be. Consequently we were prepared for something exceptional on the occasion of a recent test of the latest model. The result justified our anticipations to a certain degree, but the principal impression which we gained was one of soundness and solidity. The car—although, as it was not particularly powerful, was equally not particularly heavy—has a quite unusual tendency to hold the road, no matter what the conditions of surface and speed, and there is a scarcely explainable feeling of solidity about the whole machine that rather tends to make one under-estimate its speed capabilities. We did not test these right out, but to a sufficient extent to satisfy ourselves, and to prove that our original impression was quite erroneous. The car is amply fast, and, when one has become accustomed to her "feel," so that one can do justice to her powers, a car with which it is possible to maintain a very satisfactory average.

Without going into questions of quality and cost, we carried away the impression that the upholstery—not only as to material but design as well—was rather better than on most cars of the same class. Certainly the Peugeot was delightfully comfortable; the chassis suspension was excellent, but if it had been possible for a road bump to be so bad that the springs would have failed to absorb it completely, one felt that the cushions were sufficient to account for the remainder of the shock. We have more than once made painful acquaintance with the bed-boards of the seats, but such a thing would be impossible with the Peugeot.

Everything about the car seems to be in keeping, and of the highest class. Both design and material play a large part in matters of comfort and appearance, and in the Peugeot nothing has been stinted in either respect. So far as the mechanical features of the car are concerned, we found her, as we have said, sufficiently fast and a respectable hill-climber. We could have desired a little better acceleration, but that is only a matter of carburetter adjustment, and probably this particular instrument was set for economical running rather than spectacular "getaways."

One point that we had to admire was the remarkable efficiency of the electric starter. We have had, perhaps, a run of ill luck with these instruments, and it may be that a further run of good luck is in store to even things up. However that may be, it was a relief to find on the Peugeot a starter that would actually spin the engine faster than one

could swing it by hand, instead of one that appeared barely able to turn it over, and was, moreover, in imminent danger of using up the last scrap of current in the battery. The Peugeot starter, if we remember rightly, was an S.E.V., a make which has as widespread popularity in France as the Bosch magneto once had in England. If anything, the starting motor was a trifle too vigorous, but that is a good fault.

The combined lighting, starting and ignition switch-board of the Peugeot, although no neater than those of several well-known British electric equipments, is certainly ingenious and, what is perhaps more important, effective.

Our run on the Peugeot was simply a run, and not the prolonged test that we should have preferred, but we took the car into the somewhat tricky Chiltern country, wherein



The 16 h.p. Peugeot.

may be traced out as good a testing ground, starting with the ascent of Brockley Hill on the way to Elstree, as one could wish for. The initial long pull proved the Peugeot to be a sound, if not astounding, hill-climber, an impression which was confirmed on the shorter, sharper slopes further out. She would probably have performed even better in the hands of one more accustomed to her, for the Peugeot—so far as we were concerned, at least—is not a car which gives away all her secrets in the first moments of acquaintance. Cars, curiously, differ as greatly as human beings in this respect; with one, one is on terms of immediate intimacy, while with another the process may require days. This matters little, of course, except that fair criticism is more difficult in the latter case.

Taking the Peugeot's performance, and making allowance for our uninitiated hands on the wheel, we were well satisfied—more than satisfied, indeed, that the vehicle is one which will give its owner good service over many a thousand miles.

A few brief particulars of the design may be interesting. The engine is a monobloc of 82 mm. bore by 130 mm. stroke. The carburetter is a Zenith of the horizontal type, while the high-tension magneto ignition possesses automatic control. The cooling is by pump and lubrication forced throughout. The clutch is a metal disc working in oil; a four-speed gear box is fitted, and the final transmission is through an underslung worm to the live axle.

Suspension is by semi-elliptic springs in front and full cantilevers, aided by Peugeot shock-absorbers at the rear. Both brakes, internal-expanding, are arranged in drums on the rear wheels.

OUR PHOTOGRAPHIC COMPETITION.

The Principal Results of the January Event.



"A W.D. Lorry or a Persian Road." (1st prize.)

ON this page are published the three photographs which have been judged to be the best sent in for THE MOTOR-OWNER's January Photographic Competition. The names of the lucky competitors are as follows:

First Prize: Mr. CHARLES H. YOUNG,
"Culverden," Ormonde Rd., Godalming.

Second Prize: Mr. W. H. JOHNSON.
Bewdley, Newhaw, Weybridge.

Third Prize: Mr. F. ROBERTSON, Institut
Carnal, Chatena du Rosey, Rolle.

These competitors have been acquainted with their good fortune, and requested to specify the forms, within the values of the prizes—1st, £5 5s.; 2nd, £3 3s.; 3rd, £1 1s.—which they desire their prizes to take.

Consolation prizes have been awarded to the following competitors, but owing to lack of space we are unable this month to publish reproductions of their photographs:

Mr. T. W. Barber, 60, Welbeck Street, W.

Mr. E. A. Barker, Hawkcliff, Steeton, Yorks.

Mr. H. Gayton, Burlington,
Southampton.

Mr. T. H. Halsall, Cheetham
Hill, Manchester.

Mr. Eustace H. Wade, Kingston Hill,
Surrey.

Mr. E. H. Ward, Market Hill, Buckingham.

A small prize which, it is hoped, will prove acceptable will be despatched to each of these competitors, and it is further hoped that they will be encouraged thereby to "try again."

As regards future competitions the only qualification necessary is that every entrant shall be an amateur photographer. Beyond this and the fact that prints on glossy paper are preferred there are no irritating rules or restrictions. Photographs should



"A Bit of Old Warwick." (2nd prize.)



"A Chandler 'Light Six' in the Island of Java." (3rd prize.)

be addressed to the Art Editor, THE MOTOR-OWNER, 10, Henrietta St., W.C.2, and should bear on their reverse their title, the name and address of the sender, and the words "Amateur, unpublished photograph."

But, in view of the fact that the short and dull winter days offer little opportunity for amateur photography, it has been decided temporarily to suspend THE MOTOR-OWNER Photographic Competition for two or three months. Due notice of its resumption will be given.

THE 40 H.P. FARMAN.



The luxurious 40 h.p. Farman car.

THE six-cylinder Farman is one of those cars that are difficult to criticise ; at the best, any strictures one makes are the outcome of individual preference alone. For undoubtedly the Farman has "arrived." In point of age it has not nearly cut its wisdom teeth, being indeed of tender years—but its designers have. Which is just as one would expect, seeing it owes its *fons et origo* to the brothers Maurice and Henri of that ilk.

The chassis is well worth studying ; as to the coachwork, of that we cannot speak, for the car we tried had a temporary body ; but others that we have since inspected are in keeping with the mechanism. The Farman is by no means inexpensive ; nor, on the other hand, in view of its high quality, could it be termed dear. Excellent design, really good execution, are both combined with distinction. The car moves with grace ; its atmosphere—to use a significant word beloved of novelists—is artistic.

Perhaps one might suggest modifications such as pedals adjustable to the stature of five-foot-two and six-foot-four ; it is even thinkable that not to every one do aluminium pistons and duplex ignition appeal, or, in turn, that one could, out of sympathy with one's hard-working pockets, dispense with one or more of the other refinements.

But, having thrown on the car what shadow we can, there still remains the fact that it is one of wide appeal. Not without interest is it that the six cylinders, cast *en bloc*, are fashioned of steel, that the crankshaft is hollow, and the valves set overhead. It is claimed that the engine is light—so it may well be in view of the maker's aviation experience. And to do away with crankshaft vibration a fly-wheel is carried forward of the engine—a device not altogether new, not general, but effective.

That the car throughout is silent a test quickly reveals. Never is the engine stressed ; it does not "fuss." A faintly perceptible hum is the most you hear from the transmission ; the brakes do not advertise themselves, save by effective retardation. In conjunction with the duplex Zenith is a corrector for adjusting the flow of petrol to suit the temperature. It appears to function well. As we remarked above, there is a dual ignition system—two sets of sparking plugs, one magneto-fed, the other supplied by accumulators.

Neither system is at all dependent on the other. The fan that assists the water pump is under the driver's control. If the temperature gauge admonishes him that the water is not warm enough he can cut out the fan from his seat. The two unit system of battery-charging and engine starting is used, and a full platoon of instruments keep the driver cognisant of the various functions.

With the clutch there is no danger of "snatching" ; small springs beneath the lining giving gradual engagement. We found the gear change easy, and the box itself has something of interest to the engineer in its skew gears. There are the usual brakes—very efficient, by the way—the steering calls for no appreciable effort, and the car can get round very sharp bends without having to reverse.

Amongst the car's technical points of interest are the engine dimensions. Evidently the designers have been shrewd enough to keep in touch with events in this country, since they retain a moderate bore—rather less than four inches—while assuring the necessary and non-taxable power increment by a stroke of 140 mm. The cam shaft is placed above the engine, and precautions have been taken to avoid "whip" or vibration in the crank-shaft.

A free use of helical gearing abolishes noise, for we noticed that this type is utilised for driving the fan and the magneto, as well as the pumps and dynamo. In the valve system likewise one observes clever design. Fashioned from steel that is particularly durable, the valves are carried in extra long guides which are, by the way, saved from side-thrust by the use of plungers between the tappet-lifters and the valve stems.

According to desire one can regulate the temperature of the carburettor air supply, and the induction pipe itself is kept suitably warm by means of a hot water jacket.

A fitting that is novel and equally useful is the barometer on the dash. When one ascends a thousand feet, for example, the barometric pressure falls about an inch, which means a lessened density of the air. This instrument therefore gives the driver timely warning to adjust the air supply to suit the elevation. Gradients are indicated also, a thief-proof lock is provided, and the equipment includes plenty of spares and tools, a couple of extra road wheels, and six covers and tubes.



The fully equipped Farman instrument board.

A super-car that is almost beyond criticism.

MOTOR POWER ON THE ESTATE.

The Advantages of Self-Contained Motor Ploughs.

IN certain respects the self-contained motor plough has distinct advantages over the more ordinary type of agricultural tractor for work on estates. In other ways it is inferior because it is less ubiquitous, but it is generally possible, by adding certain attachments, to convert it into a tractor at least reasonably efficient for drawing agricultural implements in the field. It should not be regarded, even with such attachments, as being suitable for general haulage purposes upon the road.

Let us consider first its special merits. One point is that the whole outfit is capable of being swivelled round a single pair of driving wheels or chain tracks. The consequence is that it can be turned very short at the headlands, and has a considerable advantage over practically any independent tractor in this respect.

Generally, turning is assisted by an arrangement by means of which the drive to one of the wheels can be temporarily disconnected, so that this wheel acts as a pivot round which the other one swings. The next point is that the whole outfit can be quite easily controlled by one man, who sits right at the back over a small swivel wheel behind the ploughs. He is thus able to watch the ploughing or the other work that the machine may be doing, and at the same time to attend to the steering of the tractor.

In most cases the ploughs of the self-contained machine are under very complete control from the driver's seat. Thus in one case the plough is lifted and lowered by a long lever at the driver's right hand, and in conjunction with this there is a shorter lever for tilting the plough to the required angle.

Then the whole of the weight, including that of the implements themselves, is upon the driving wheels. This takes us some distance in the direction of getting over one of the greatest difficulties in connection with the design of agricultural tractors. This difficulty is that of securing sufficient grip without undue weight. There is no doubt about

the disadvantages of a very heavy tractor under many conditions, and there is equally no doubt about the difficulties that sometimes arise in operating a light tractor, which, because it hauls instead of carrying, has nothing but a part of its own weight to give adhesion to the driving wheels. Evidently, if we can overcome such troubles at all it is by utilising the entire weight to assist the grip.

When this is done, we get a machine which can work satisfactorily even in fairly wet weather, pulling steadily without slipping, and, at the same time, not unduly compressing the soil. Moreover, lightweight—other things being equal—means light fuel consumption, and generally a handy and compact machine.

Many agriculturalists prefer, when ploughing, to run their tractor or ploughing machine with one wheel in the furrow and the other

upon the unploughed land. This evidently means tilting the machine sideways, but this disadvantage is offset by the fact that the machine becomes practically self-steering and by the absence of any risk of breakdown of the edge of the land due to running a heavily loaded driving wheel along it. In many cases the self-contained ploughs are so arranged that the axle of either one wheel can be shifted the desired distance below the axle of the other wheel. The consequence is that, while the one is in the furrow and the other on the unploughed land, the machine still remains on an even keel, and no unnecessary side-strains are set up.

As regards performance, it is claimed for one of the smaller types that it will plough an acre in three to three and a half hours, cultivate it in one and a half hours, and harrow it in 35 minutes. Taking the experience of one of many users, we find a machine of this type ploughing ten acres in three days with 10 in. furrows, 5 in. deep, and using about two and a quarter gallons of petrol per acre.

These particulars will suffice to give a sufficient idea of the particular advantages of the self-contained plough



THE lines of the Vauxhall lend themselves to distinctive coachwork of the enclosed variety, and it would be difficult to conceive a more distinguished carriage than that which we illustrate.





ROLLS-ROYCE

I know there is now a perfect car.

Mr. W. H. Johnson in "THE FINANCIAL NEWS."

The quintessence of all that a car ought to be.

W. H. J. in "COUNTRY LIFE," July 10th, 1920.

The most luxurious road travel I have yet experienced.

Badminton Magazine, July, 1920.

ROLLS-ROYCE, Ltd., 15, Conduit Street, London, W.1

Telegrams: Rolhead, Reg. London.

Phone: Gerrard 1654 (3 lines)



CARNIVAL! — What pictures of enchantment the very word conjures up in the mind! The merry, struggling multitudes, kaleidoscopic and ever changing in an abandon of reckless gaiety; its riot of colour; its mimic battle of flowers, its weapons a cascade of rose petals perfuming the soft night air; the clash of music mingled with the clamour of tongues; the blaze of many coloured lights and the deep purple shadows, contrasting vividly with the calm stillness of the summer's night.

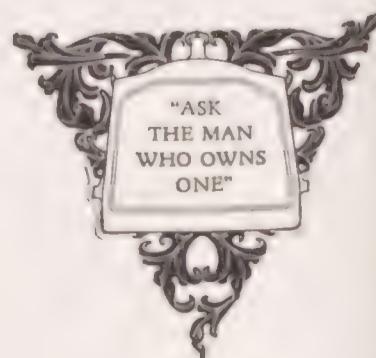
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Sole Concessionnaires :
THE W. C. GAUNT CO.

STEPHEN JOHNSON
GENERAL MANAGER

Telephone : Gerrard 713 Telegrams : "Cegaunpaca, Piccy, London"



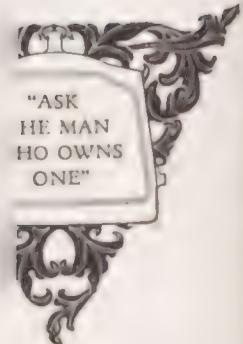
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But one touch is yet wanting to complete the picture, and it is supplied by the arrival of the Queen of the Revels—not drawn, as of yore, by milk-white steeds, and attended by her court of beauty, but—as is more fitting in these ultra-modern times—the chariot of her choice is a **PACKARD TWIN SIX**. More fitting, because, wherever distinction counts for anything, wherever exclusiveness in personal taste is to be found, and wherever the crowning touch to any scene, however gorgeous, is lacking, the choicest of all cars, **THE PACKARD TWIN SIX** supplies it.



Showrooms :
198, PICCADILLY, W.1
Service Station and Works :
HENDON, N.

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Packard



Page xliv

The Motor-Owner, January, 19



Just a minute, I'm using Royal Vinolia

NO time need be lost in shaving by the man eager to be off for the joys of the open road—the beauty of lake and mountain; for Royal Vinolia Shaving Stick immediately yields a profuse, creamy lather which quickly prepares the way for a speedy, comfortable, and entirely satisfactory shave. The use of Royal Vinolia Shaving Stick means a good start for the day, whether on pleasure or business bent.

IN ALUMINIUM CASE, 1/3.

For the man who prefers a Shaving Powder, Royal Vinolia Shaving Powder will be found equally pleasant and satisfactory.

Royal Vinolia SHAVING STICK

RV 45/-100

VINOLIA COMPANY LIMITED, LONDON.



A BETTER WAY OF DOING IT.

(On the principle that the onlooker sees most of the game, the man who doesn't make motor-cars can usually offer suggestions for improvement to the men who do. With all due deference to the further "tag" that a little knowledge is dangerous, we have ventured to suggest "a better way of doing it" in regard to several automobile functions, features and fittings.

ONLY those people who have graduated in motoring from the very early days are really able to appreciate the excellence of modern cars. The bulk of motor-car owners of to-day have stepped into the movement in much the same fashion as a child is now ushered into a well-aired, Tube-lined, let-us-do-it-for-you world. They take everything for granted.

We said the modern car is excellent. It is. Yet it is not all it could be, in spite of the optimists who ascribe to it glowing terms, such as "ideal," "perfect," and "super-excellent."

One thing that in our opinion is distinctly inharmonious with the smart, artistically curved torpedo dash that is now so popular is the wind-screen. Not that modern types are not stylish, even ornamental, as far as one can use this term of an article that is unmistakably rectangular. Far more attractive, however, is a screen that is curved in concord with the rounded panels of the dash, for it does away with the rigid lines that alone mar the picture.

We have heard it objected that a curved wind-screen is impracticable. It is not, however. In pre-war days screens of this sort were on sale in at least two places in London, and what is more, we ourselves drove many a time a Bedford car fitted with one.

A fitting that is more utilitarian is one that enables drivers to have a clear view of the road in rainy weather. As it is now, we usually have either to keep the screen closed and drive more or less blindly, or else to open it and get drenched. Neither is pleasant, and both are absurd. There are remedies, we are aware, but usually the motorist himself has to add, at his own expense, what should be included on every up-to-date car.

Another thing that should be standardised is the forward hanging of doors. On railways doors are so hung that they close automatically with the train's movement. Yet this reasonable practice is omitted in many cars.

At first sight people may say this does not matter. But it does! For one thing, why should we have to struggle to close a door against a rush of wind? Especially when, hung the other way, it will close automatically? But apart from this, doors with hinges on the side nearest the rear seat are dangerous. On one occasion we saw a car door hit a lamp post, owing to its being hung the wrong way. The damage was considerable. On another occasion we were hit in the back, whilst walking on the pavement, by a cab door impatiently thrown open at a very aggressive angle. Had the door been hinged as we recommend, our shoulders would have suffered very much less.

And now we come to a part of the car that is by no means ideal. We refer to the hood, which, despite very praiseworthy efforts, has many drawbacks. Admittedly there are types of hoods that are practically faultless, but, again, it is only too frequently left to the motorist himself to fit one. Every hood should possess the quality of being swiftly opened out. As it is, in not a few cases the procedure is dilatory. A hood that would shoot forward

into position when desired would be very welcome and save one getting wet while fumbling with straps or winding a handle.

Every modern car ought also to have side curtains that can be easily got at when wanted. Usually they are hidden away inaccessibly, which is, their makers would say, the fault of the car owner. No doubt. But only because the side curtains, as at present designed, are little else than a nuisance. We are glad, however, to see that certain enterprising people have arranged for the side curtains above the doors to open with them. And very sensible too! If you don't realise their advantage, ask any hat-disturbed lady—at the time—her opinion of the usual patterns!

Once more, why should we in these days, when most things are of the *de luxe* order, be liable to unexpected failure of petrol? Who does not know the mental strain due to doubts as to whether one can get home on the quantity in the tank? "Always carry a spare tin," says somebody readily enough at this juncture. Excellent advice, we admit, and have, moreover, acted upon. Only, unluckily, there is still at large that ubiquitous individual who simply cannot distinguish between *meum* and *tuum*. And if he takes a fancy to your 8s. 7d. worth, well, you usually discover his idiosyncrasy at a storm-charged moment.

And yet a perfectly simple remedy exists—on some cars. But why not on all? There's no earthly or any other reason why it shouldn't. Isn't it simple and inexpensive enough to fit a double-branched supply pipe to the petrol tank, each with its own tap, and one drawing from a higher level than the other? As long, then, as you use the latter, your mind will be at ease, since you know that when the petrol fails to reach the carburetter, you have still two gallons or so—or any pre-arranged quantity—in reserve. And opening the cock on the second pipe will deliver this reserve to the engine.

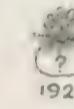
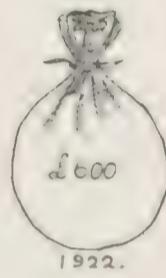
Equally necessary also, although only indirectly related to the car, are such needs as sign-posts which are illuminated at night, a room specially set apart and clearly indicated for ladies at every hotel of reputation, some system of wireless telephony, so that if a party on tour get separated, or otherwise need assistance, they can do so more readily than our present facilities permit. Why should not the A.A. boxes be fitted out in this way? If they were, the Association would "come as a boon and a blessing to men." It does already as a matter of fact, but we all like more of a good thing!

There is still one other point we would like to mention, and of which we have more than once felt the lack. And that is some system of credit which enables tourists to call at local centres and cash cheques. It is not so unusual as might be imagined to find oneself temporarily short of money, owing to unforeseen causes, and a very awkward dilemma it is! Yet it ought to be quite feasible for a go-ahead concern like the A.A. to arrange some system of credit notes so that a traveller, duly authenticated, could rely upon drawing money at need at local banks, or hotels or A.A. branches.

FIGURES THAT TALK, AND THINGS

Figures are dry, uninteresting things, but they have to be tolerated, and the motor-owner, of all people, should give some attention to hard facts if he wishes to derive the maximum of satisfaction from his car. Several points of interest and importance are presented in a novel fashion below.

THE INCREASING UTILITY OF THE CAR—



Show model—First year—
Utility nil. for fine
weather only.

Second year—
all weathers,
roads and
climates.

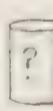
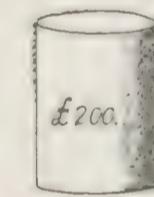
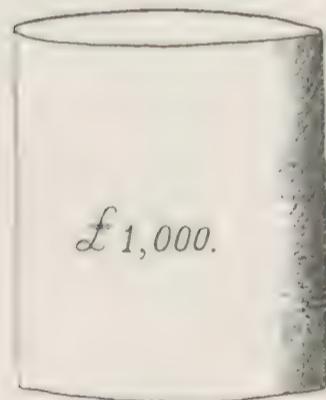
Third year—
"Too much luggage?
Why, what's the car
for? Of course we'll
take all we want."

Eventually—
used commercially, when
the utility of the car is
greatest of all, although
the second-hand value
may be practically nil.



—COMPENSATES FOR ITS
DECREASING VALUE.

WHAT THE MOTORIST PAYS FOR EVERY YEAR.



The Cost of the Car.

Depreciation.

Wages.

Petrol.

Tyres.

Sundries.

M^r Motorist

D^r To THE ROYAL GARAGE,
LONDON.
1st Jan 1921

Jan	1st	To Tyres	44	0
"	"	Petrol	16	8
			£60	8

M^r Motorist

D^r To
THE ROYAL GARAGE,
LONDON.
1st Jan 1920

Jan	1st	To Tyres	26	8	0
"	"	Petrol	13	16	0
			£40	4	0

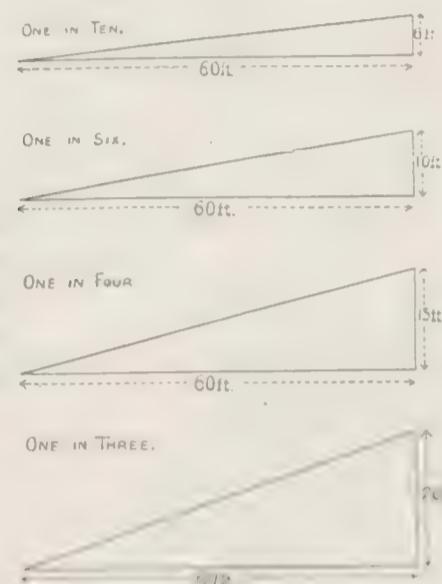
<u>M^r Motorist</u>		
D ^r To	THE ROYAL GARAGE	LONDON
1st Jan 1920		
To Tyres	8	16
Petrol	9	4
		0
		£18 0 0

Few motorists realise the bearing of speed on the cost of running a car. Driven consistently at a moderate pace throughout a 1,000-miles' trip, the bill for fuel and tyres will be relatively small. Frequent bursts of "40" will more than double it, while if the car is regularly driven "all out" the cost of the journey will be trebled. The specimen bills above illustrate the considerable difference in cost for the two chief items in a car's running expenses.

Motor-o
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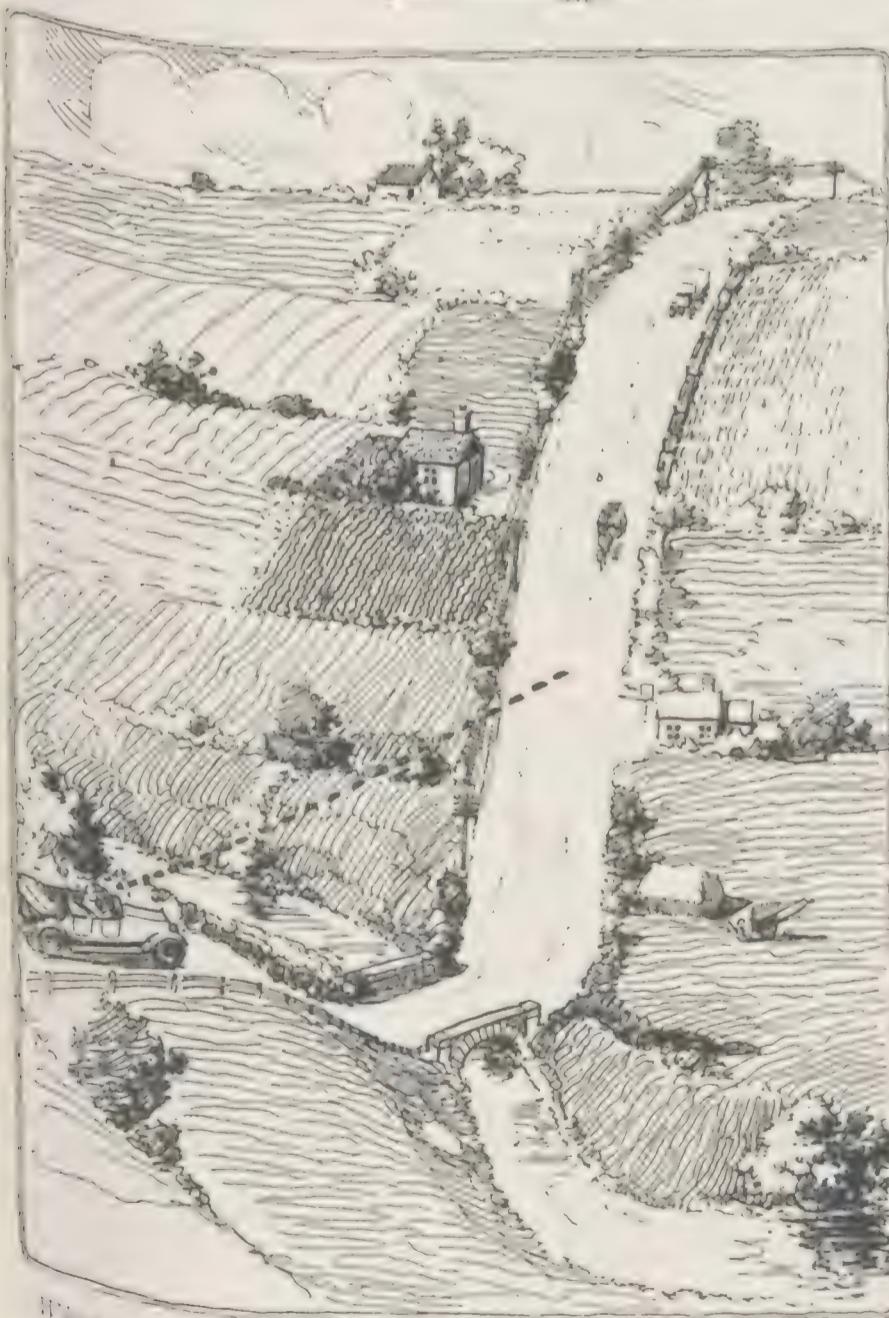
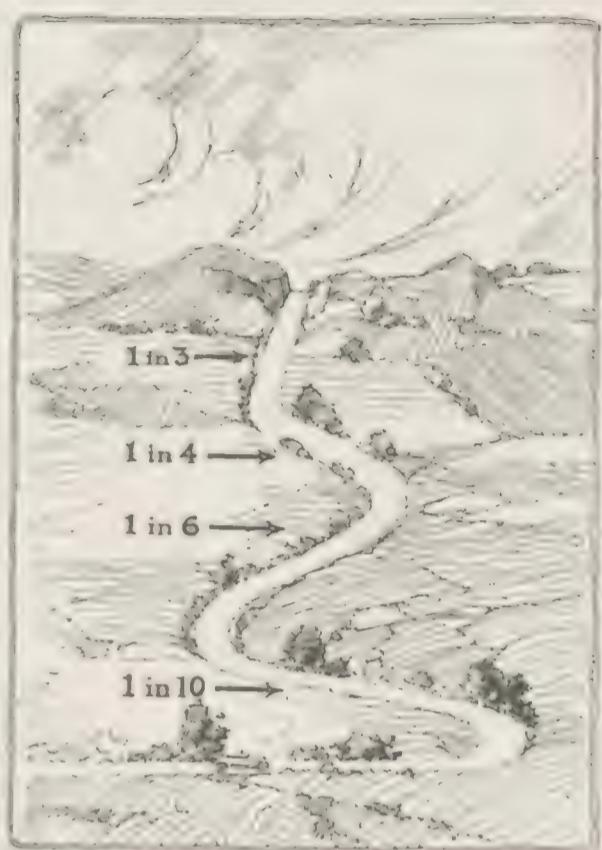
—THAT ARE NOT WHAT THEY SEEM.

Motor-owners talk glibly of the fearsome ascents that their cars have climbed, but few have any clear conception of the meaning of the figures they mention. "One in four" is spoken of quite familiarly; and yet the majority of people very seldom come across such a gradient.



This diagram shows the actual angles made with the horizontal by various gradients; but even this is deceptive, since a hill diagram looks a good deal flatter than the hill itself.

Our artist has endeavoured in this bird's-eye view to depict comparatively the varying gradients of a hill which becomes the steeper the further one ascends. They all seem to; this one finishes with a cheerful bit of one in three.



When descending a sharp hill into a valley the opposing ascent often looks almost unclimbable. It is an optical illusion, for—



On touching bottom in the valley the hill to be climbed probably proves to be even less severe than the one which has just been descended.

A SMALL CAR WITH BIG CAPABILITIES

The 70 millimetre Bianchi performs a Satisfactory Test.

THE sterling merit of Italian engineering productions has long been acknowledged ; it is a matter of common knowledge. As to the commercial acumen of the country's business men one hears less—doubtless they are as sound as any others. The fact, at any rate, that the Bianchi factory is now devoted entirely not only to the production of one model only, but to that of a model of moderate power, shows that this particular firm can read the signs of the times pretty clearly.

A few years ago concentration on a model of only 70 mm. bore would not have struck the average motorist as a particularly sound policy, for 12 h.p. was very moderate power. In view of recent improvements, however, such a car as the 12-20 h.p. Bianchi is sufficient for all requirements. One can imagine that it would make a most efficient sporting two-seater, or, alternatively, an excellent closed town carriage. The model we tried, however, was just an ordinary English-bodied four-seater touring car ; and, to put the sum of our impressions into very few words, one really couldn't wish for anything better. The only point we found to cavil at, in fact, was that the metal binding of the divided windscreen came just across our line of vision, and caused us unconsciously to be continually endeavouring to look first over, then under. It proved to be but a temporary fault of this particular car, fitted with a screen that was smaller than the standard article. Beyond that, as we have said, we could not find one single point in the running or fitting of the Bianchi that might conceivably have been better.

We ran down the Portsmouth Road for a change, and were first struck by the car's controllability and responsiveness in the confused traffic of Putney Bridge, followed by the long pull of the hill, up which she purred as if she enjoyed it. On the open road the car proved to differ from the usual vehicle of about her power in possessing a considerably higher "comfortable" speed. Every car has a certain speed at which she can be driven and controlled with least effort. With an engine of less than 15 h.p. this seems usually to range between about 27 and 32 m.p.h., but the Bianchi showed a tendency to run at a sort of automatic 40.

While we are by no means "speed merchants," we

certainly appreciated this point on the fast stretches of Portsmouth Road—on which, incidentally, the car showed that she could do her 50 without difficulty and with diminution of comfort for the passengers, which is an important point. While we did not make any scientific accurate tests, and judged the car merely from the passenger's point of view, we should say that it has a remarkably well balanced engine, for we noticed neither undue noise nor vibration at any speed.

Those who know and appreciate the beauties of Box Hill and Dunsmore Common in summer time may be able to imagine the bleakness of both spots in winter weather. They will remember also that something quite useful in the way of hills leads up to each ; and when we say that Bianchi climbed every thing to which she went, put to our entire satisfaction, it will be understood that we are paying her high compliment. The roads were heavy and the wind high, everything, in fact, against exceptional performance ; but the Bianchi could not have behaved better, imagined, if she had concealed a 25 h.p. engine beneath her bonnet.

Beneath that bonnet, by the way, is concealed a neatness of arrangement that is noteworthy even in an Italian car, which should possess the quality of excellent finish and general cleanliness of design as a national heritage. Without going deeply into chassis detail—which anyone interested

can better examine for himself at the St. James's Street showrooms—we may say that we were very favourably impressed with the entire absence of complication in exterior wiring and piping. In regard to wiring, except for those few inches here and there which are necessarily exposed, the wires are carried in covered channels, easily accessible in the most unlikely event of their requiring attention, nevertheless, entirely safe from the chafing against adjacent frame and engine parts, which is the most prolific cause of trouble. This is merely one small point in the design of the complete car ; but, having been privileged to examine several of the component parts of the chassis, we can say that the same attention to detail and wise forethought extends to every detail, great or small. The excellent fit of those spares which contain moving parts, in fact, is little short of marvellous.



The 12-20 h.p. Bianchi ploughs through bad going off the Portsmouth Road.



FRESH PROOF OF ECONOMY

TWO hundred miles daily for six days at a speed of thirty miles per hour !

That's more than the average car-owner does, so it's a very fair basis for testing a car's economy and reliability.

Under official observation of the Royal Automobile Club, an Overland from stock completed this test at Brooklands Track during the period of November 6th-11th, with the following certified results :

Number of miles covered in test 1262·48
Average mileage per gall. of petrol 33·47
Average mileage per gall. of oil 1454·4
Average mileage per gall. of water 2292·29

During the test there were no involuntary stops and no adjustments or repairs to the Overland, except replacing a fractured lamp.

Our statement that Overland owners report 30 miles per gallon of petrol, 1,000 miles per gallon of oil and 10,000 miles per set of tyres is consequently verified.

The Overland dealer in your town will gladly give you a trial run in this car of proved economy and reliability. Prices fixed as follows : Touring Car or Roadster, £495 ; Sedan, £800 ; Coupe, £750, $\frac{3}{4}$ -Landaulette, £750 ; Delivery Van, £415. Write for booklet.

Willys Overland Crossley, Ltd.

Factory

Heaton Chapel, Manchester

Sales: Willys-Overland, Ltd., 151 Gt. Portland Street, London, W.1

Overland
RIGHT-HAND
STEERING



Greetings to Friends in the Trade and out of it; to clients and prospective clients; to all who have watched with interest the inception, development and successful launching of the British Ensign "Six"; to Everyone; British Ensign Motors, Limited, proffer the Compliments of the Season, and express the hope that the New Year will bring you unexampled prosperity.

British Ensign Motors, Ltd., Hawthorne Rd., Willesden Green, N.W.10

TOLL GATES MUST GO!

Relics of another age which, while they may be ornamental, are by no means indispensable in the present era of hustle.

(Illustrations by "The Motor-Owner.")

MOST people know of a toll gate somewhere on their usual lines of travel; and, equally, most people would be surprised to know how many there are still in existence and operative throughout the country. They have paid their threepence in College Road, Dulwich, or on the road between Brighton and Worthing; and, in climbing Chard Hill on the way to Honiton and Exeter, have noticed the old toll house at the fork, and they think that the disuse of the latter is the normal state of affairs to-day.

Well, perhaps it is. On the other hand, while I do not know how many tolls remain active in the length and breadth of the land, I know that there are many more than I have any use for. Regret for the good old days" and all that kind of thing is very pretty as a sentiment, but there is no room in the hustling modern world for stupid survivals such as toll gates.

When one has just lost the heel of a boot through not quite escaping a motor omnibus, perhaps one wishes the lumbering horse 'bus and the comparative peace of the "old days"



The toll gate at Conway.



The entrance to the Menai Bridge.



The Lymington toll gate.

back again—but when it is a question of catching the Continental train at Charing Cross in a hurry or losing a day—well, the taxi wins every time.

The toll gate has, as I hinted above, a certain sentimental value—one might even go so far as to term it glamour. Was it not that honest citizen John Gilpin who, of undying memory, encountered not a few on his historic ride? Or if we turn to the "Gentlemen of the Road," what a lurid light enhances that outstanding lovable villain, Dick Turpin. How, as boys, thrilling with excitement in the hasty and surreptitious perusal of his deeds we followed him in mind, seeing ourselves in his shoes, and waxing impatient at the often-enforced halts. Did not we actually hear the pursuing feet of the "watch," as our hero large-heartedly leant over Black Bess's spume-flecked neck to loosen the hindering bars?

But all this is of yore, a page of history that is obsolete. "Other times, other manners"—at least in almost everything else. Yet, in spite

of its anachronism, the toll gate remains—out of keeping, a mouldering relic, an unnecessary legacy.

Once the toll gate had its uses. In the days of our ancestors roads were none too durable. They had, therefore, to be repaired. And who should pay for this maintenance if not the user? That is sound logic, at which none could cavil.

But to-day? Ah, that, as Kipling puts it, is another story. To progress, to the free use of the highway that alone was in consonance with the ripening age, the venerable, glamour-crowned toll gate had to yield. In spite of organised opposition legislation swept it, lock, stock and barrel, into the limbo of archaic things. That is, it removed in the main. Yet, such is the persistence of the unnecessary, that the toll gate lingers still—unobtrusively, it is true; just here and there; but remains, none the less.

It occurs where it is unexpected; where, indeed, at times, it becomes the object of no little objurgation. For it is insistent. It cries "Halt" in no uncertain tones. And why? Solely because it is Bumbledom re-incarnate, a barrier that exists without solid right.

For do not we, the great army of ratepayers, yield our dole, however unwillingly, for the purpose of maintaining both highways and byways? Did not our comprehensive legislation promise us, in consideration for our hard-earned pence, the freedom of the road? And are not we mulcted still deeper to-day for the same object? To what else the purpose of the new taxation?

Yet we are "had" both ways. Usually it is considered inadvisable to rob Peter to pay Paul. Yet still, upon occasion, that is the reprehensible procedure we are forced to follow in this year of grace.

Truly is Justice symbolically blindfolded—we are yet very much, in this respect, as were the ancients. Still does the anachronistic toll gate offend us, lingering, firm-footed, to the annoyance of the public. "Out upon it for a malpractice," as Bluff King Hal would have put it. Breezy language, in truth, and not unwarranted.

On the other hand the toll gate has in a few, a very few, instances a *raison d'être*. Where, that is, it guards property over which the owner is philanthropic enough to offer passage. For, after all, even the possessor has still a few rights. If he chose to invest his money in broad acres it is thinkable that over it he may claim some sort of control. If the "Englishman's house is his castle," which he is fully qualified in defending, the much objurgated landlord may, perchance, assert that that which is his is his own. And should he enforce a dole—well, the expenditure, by saving a sixpence-a-mile detour, may well be judicious.

But such instances are infrequent. A baby's hand could number them; even to an illiterate cannibal would the tally afford no conundrum.

The majority have no such palliation. They exist merely because they existed, careless of,



THE toll gate at the entrance to Ashridge Park, Earl Brownlow's estate. This is a toll to which one cannot take objection, as the proceeds go to the relief of local charities.

every citizen's right. It is an age of progress, motion, and, loth as we may be to part

indifferent to, averse to the whirling wheels of progress.

Can we defend it up grounds utilitarian? What poor "Ole Jarge," who, toothless and decrepit, shamforth to the impatient "honk" Or his antiquated substitute Dame Susie, who performed like office at staccato intervals? For them I could be sympathetic, if they were almost, figments of the imagination. For, methinks, I seem to remember a lusty attendant, even, upon occasion, schoolboy of Shakespeare's "whining face," as modern janitor. Surely, then, the elders at the rate, work—labour that benefits the community—is

Let it be one thing or other. Either we pay our dues as we use, or, having deposited a sum compounded, with inferential key to the highway, give us that freedom that



A.
At Burlesdon Bridge on the road from Gosport to Southampton.

them, glamour-crowned anachronisms yield.

The toll gate must go.

A. J. Mc

Will readers please note that the Panhard business Great Britain and Ireland is now controlled by Mr. Turpin, who for the last twenty-five years has been associated with this well-known French car. The works are situated at 14, Regent Street W., and there are large repair works and a stores department at Acton.



THI
Cookham Bridge.

THE ARGENT

For many years past designers have been baffled in their endeavours to design a motor car heater that could be relied on to give a comfortable degree of heat in all weathers, to operate successfully under all conditions and to cause no uneasiness on the part of the passengers.

TO-DAY, however, all difficulties have been overcome; all obstacles swept aside, and winter motoring is now turned into a pleasure. Invalids and elderly people who have been debarred from a very necessary enjoyment may now take long drives in warmth and comfort, for a new and ingenious device called

THE ARGENT PATENT VACUUM WARMER

has solved the problem of efficiently maintaining a comfortable degree of warmth when motoring.



AN ABSOLUTELY UNIQUE INVENTION

The Argent Heater can be easily and quickly fitted to any car, is perfectly **safe** and is the **only** practical and efficient car heater on the market. The passengers in an open car can enjoy a ride in the coldest weather.

The Argent Patent Heater consists primarily of a patent Silencer that abstracts the major portion of the heat from the exhaust gases, thus effectually silencing the exhaust. The heat is transferred to a current of pure air drawn, by means of the Patent Vacuum Ejector, through a suitable warmer in the car body. This warmth is comfortable and suffices for the coldest day, and is maintained automatically under all conditions. If less heat is desired a small movement of the switch allows three-quarter, half, or one-quarter warmth: again the desired temperature is maintained constant. The automatic regulation prevents a dangerous or uncomfortable heat.

THE RESULTS ARE INCREDIBLE TO THOSE WHO HAVE NOT TRIED IT

Try the Warmer on approval — Particulars from Agents or

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A. J. Mc

he Panhard business controlled by Mr. D...
y-five years has... French car The... Street W., and their department at Acton.

Page xlvi

On the one hand
is dirt
on the other is
SPRINKO



To Clean Hands.

IT'S very easy to get your hands grimy and dirty, but it's not so easy to get the dirt off—in the ordinary way; but just use a little Sprinko. Sprinko removes the most obstinate grime and dirt quickly and thoroughly, and without any need for the scrubbing which only makes the skin rough and sore. Sprinko is made for one purpose only—to clean the hands. Just dip the hands into cold or warm water, sprinkle a little Sprinko on them, rub thoroughly for a few moments, then rinse. Your hands will be clean, smooth and white.

**IN NEW STYLE
SPRINKLER-TOP BOXES, 1/-**

*Of special value to motorists, cyclists,
allotment holders, sportsmen, etc.
Sprinko does not injure the skin.*

**SOLD BY ALL LEADING CHEMISTS,
GROCERS, STORES, ETC.**

SPRINKO.
Clean Hands with a Sprinkle.
VINOLIA COMPANY LIMITED—LONDON.

Sp 3-31a

THE ROAD

There is Winter Sunshine as well as Summer. Short lived



Miss Alice Crawford goes motoring in the crisp morning air.

THERE is no sound reason, so far as I am aware, why "when winter comes to rule the varied year" one should bid the road a long adieu. An occasional *au revoir* to the road in winter is permissible and may even prove salutary. But to

"When winter winds
Set the yellow wood sighing :
Sighing, oh ! sighing,"
for no better reason than that such winds can be cutting, or that sighs make for melancholy, is surely to fail to recognise one's chances. I, for my own part, confess to a strong, an ineradicable distaste for hoods when they are functioning. Their folds are admirable as receptacles for the lighter sort of *impedimenta*, but with the folds transformed into walls I, chafing under a sense of being caged, sometimes take to marvelling at the perennial cheerfulness of my Aunt Georgina's canary.

But not every day in winter is it necessary to raise the hood aloft. There is winter sunshine as well as summer, and the one kind, if it lack the body (as one may say) of the other, is by no means always wan. Short-lived it is, 'tis true, but it can be effulgent on occasion—in the country, at any rate, however the case in murky town or city—so

effulgent, indeed, as to preserve a "rocketeer" from the deadliest gun and to provoke the straightest rider into saying things about the line the fox has chosen. I have known December days, and January too, when the sunny side of a pinewood has been warm enough not only to enable one to cheat Mr.

IN WINTER

By FELIX RINDLE.

it is, and sometimes wan, but it can be effulgent on occasion.

Boniface out of a fat bill for a thin luncheon, but even to allow one to enjoy one's bacon and toast sandwiches sitting instead of pacing. Moreover, though in winter roads are sometimes long a-drying, still, sometimes they do dry, so that not always are the wheels going splash-splosh or sizzle-swizzle over the pot-holes. There are days on which frost follows on rain, and on such days the music of the going, often unheeded in summer (except, perhaps, o' nights) insists on being heard. It is punctuated withal by sounds as of "the crackling of thorns under a pot." Those sounds, one knows, have been associated through the ages with "the laughter of a fool," but they may also have associations apart from —, whom you have perhaps marked down (with your usual sound judgment) for a pompous fool; —, who (I myself can vouch for it) is a pedantic fool; and —, whose folly is akin to the peacock's; not to mention that poor devil —, who was born, bred, is still, and ever will be, a fool only unto himself.

Were I put to it, I could recall not a few but many winter days when to be abroad was to take full toll of the zest of living, and there are places—Lyme Regis, Sidmouth, and Torquay, for instances—that, although I have only visited them once, and that in mid-January,

are associated in my mind with sunshine that both for clarity and warmth June might be proud to boast—an ordinary June, I mean, not a miserable travesty like last. "The Sunny South!" you may exclaim. Quite so; but a wholesome respect for the law of libel need not preclude one from

(Continued on page 42.)

G*



THIS MONTH'S

WILLIAM MALESBURY LETTS, C.B.E., managing director of Crossley Motors, Ltd., is one of the most remarkable personalities in the British motor industry. His connection with motoring extends over twenty-three years, for it was in 1897 that he made his first practical acquaintance with automobilism—on a belt-driven Cannstatt Daimler car.

One of the band of pioneers who identified themselves with the trading side of the movement, he spent the following year in America, where he became acquainted with the Locomobile steam car and the modern spirit of "hustling." On his return to England he held the position of sales manager to the Locomobile Company in the British Isles, disposing of upwards of 1,000 in less than two years.

In 1903 he left the Locomobile Company and joined Mr. Charles Jarrott, forming the firm of Charles Jarrott and Letts, Ltd. This company successfully handled another American car—the Oldsmobile—in the British Isles, being also sole agents for the Lorraine-Dietrich, a well-known French make, and for the Crossley.

Mr. Letts has always believed in the value of publicity. In 1903 he drove an Oldsmobile up the steps leading to the terrace in front of the Crystal Palace. As the car was only 5 h.p. and the gradient 1 in 2.9, this feat was considered marvellous. The following year he performed another meritorious feat with another



W. M. LETTS, C.B.E., Managing Director of Crossley Motors, Ltd.

Mr. Letts's experience of motors and motoring goes back over twenty-three years. He has never "let up," and retains to this day a controlling interest in more than one automobile enterprise.

CARTOON

car of this make, climbing Mount Snowden in record time

In 1909 Mr. Letts assumed full control of the business of Charles Jarrott and Letts—Mr. Jarrott having seceded from the concern—becoming in 1910 managing director of Crossley Motors, a firm that he has piloted to its present important position

During the recent war Mr. Letts was able to give his country the benefit of his wide motoring experience. As far back as 1912 the War Office had already approved of the Crossley, possessing the outbreak of hostilities a fleet of fifty-six of this make. This number being totally inadequate, the firm received urgent orders from the War Office to concentrate upon building cars and tenders for the Royal Flying Corps, and thousands of Crossleys were quickly despatched to every battle area.

So satisfied were the Government with the cars that they requested the firm to manufacture aeroplane engines also, and subsequently to assist in augmenting the output of aeroplanes. This entailed building a new factory, which was described in a public speech at Manchester in December, 1918, by Lord Weir, the then Minister, as "the finest of its class in the world."

In addition to Mr. Letts's other activities, he is managing director of A. V. Roe, Ltd., of Manchester, in which the Crossley company have the controlling interest, holds a similar position in the Willys-Overland-Crossley concern, and is chairman of Charles Jarrott & Letts, Ltd.



A reduction of the coloured cartoon of Mr. W. M. Letts, which is presented with this number of THE MOTOR-OWNER.

THE ROAD IN WINTER

(Continued from page 41.)

venturing to assert that not always is the south sunny, nor even the still more vaunted south-west—the Cornish Riviera, as the railway bills have it. Equally, not throughout January nor March (whose fangs are sometimes sharper than January's) is the Cat and Fiddle road invariably snow-bound. I own that the last time I was up in Derbyshire in January the good folk of "they parts" spoke of that road respectfully—told how first one car, then another, and finally a third had been snowed in on the way up the Cheshire side—and I own, too, that we ourselves might have failed to get across Taddington Pass and down Topley Pike into Ashwood Dale but for our Parson's non-skids. But then I have also known the Bakewell-Buxton road and the Cat and Fiddle as dry (but happily not so dusty) in

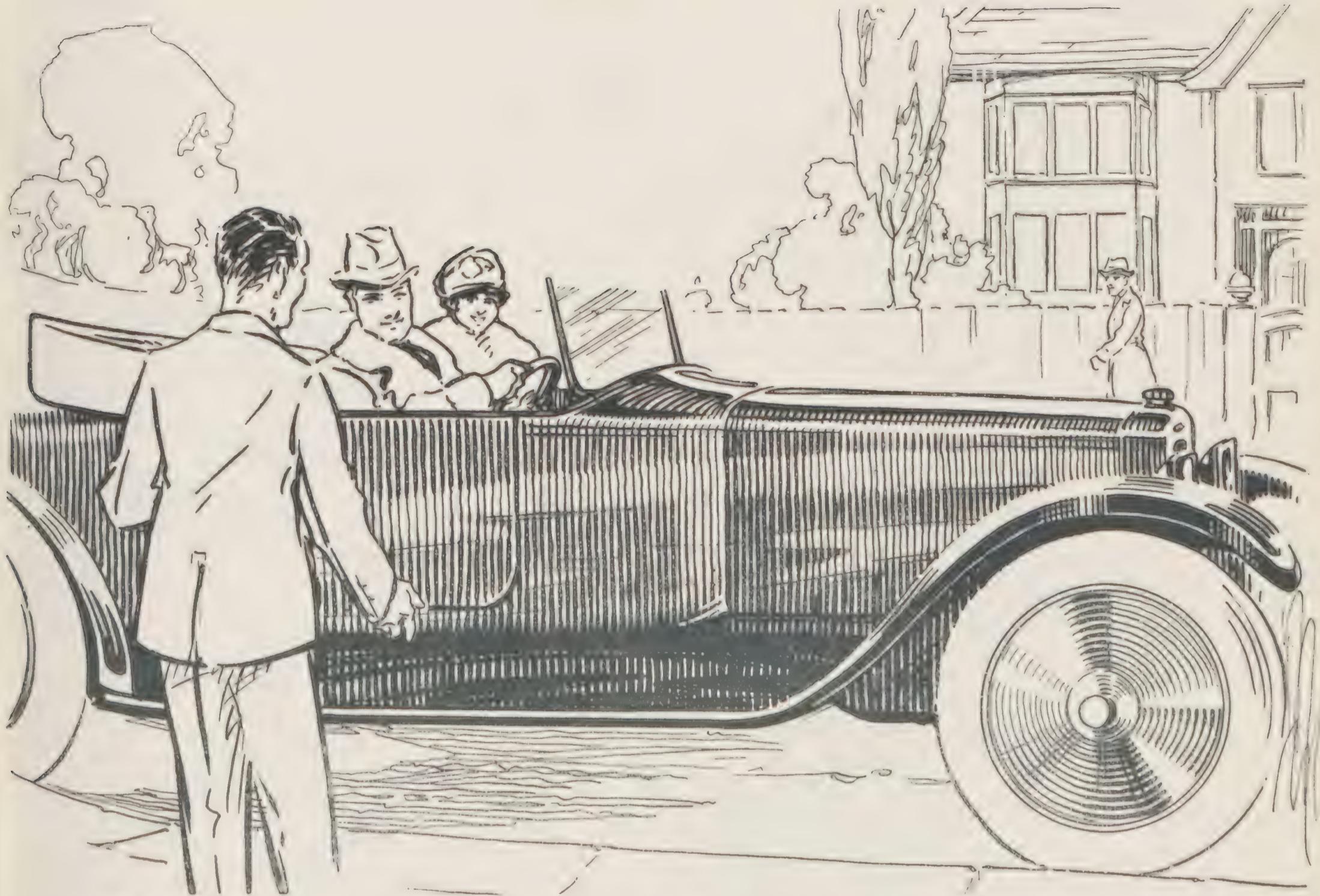
January as in July, and known, as well, the Wye, rounding out from Monsal Dale, to sparkle as graciously in December as in any summer month. More than that, it was from heat rather than for warmth that one pocketed one's hands as one rambling round Warkworth Castle on a late-January day; for the North Sea, which, you must know, that imposing ruin overlooks, was little if all less placid than Weymouth Bay on a languorous August afternoon, and the sun was urbane as well as showy.

Such genial days in winter are perhaps less the rule than the exception, but are they the less precious on that account? Surely, on the contrary, they are doubly precious, to be taken thankfully, to be treated as highdays. They are rich in a quality that, though charm of their infrequency apart, is all their own. The quality is to a degree.



"Crossley"

W. M. LETTS, C.B.E.



"No, it's the same old car—*Refinished!*!"

THE man who has his car refinished the P.E.P. way will have a hard job to convince his friends that it's not a new car.

For our refinishing work is up to the highest standards of carriage painting. But we do it much more quickly and cheaply than has ever before been possible for thorough work.

There's no secret—just the application of modern methods to an old-fashioned process.

P.E.P. paints and varnishes are made from a new formula which makes possible accelerated drying without loss of elasticity or other properties. This alone saves days.

Paints are applied by the new, efficient method known as "flow-coating," which not only is four times as quick as brush-painting, but produces a smoother, more even coat, free from marks.

And the P.E.P. organisation systematises the work

so that each job moves forward smoothly through its different stages. We make really large savings in time and labour—and give you the benefit in low price and quick delivery.

At your service now

The P.E.P. refinishing process is at your service in all degrees of elaboration, from simple cleaning and polishing to complete repainting (11 coats).

It is fully described in an interesting folder, "Saving the Surface of your Car." We will send you a copy with pleasure.



THE PERFECTION ENAMELLING PAINTING CO., LTD.,
161 GT. PORTLAND STREET (DEPT. A2), LONDON, W.1

PERFECTION

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London, Western 4686

How's This?

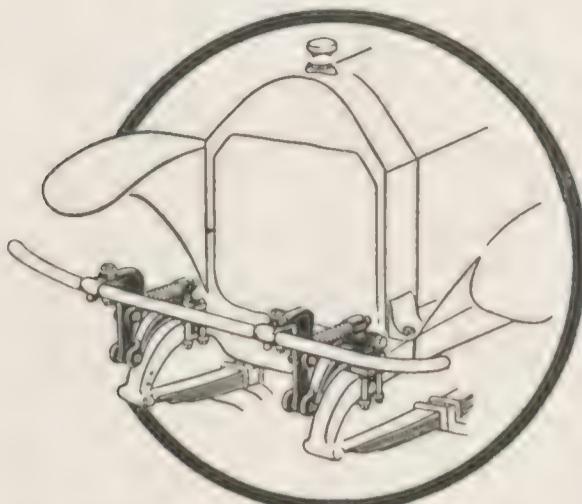
We clean car all over with superheated steam, cocoanut oil and Castile soap; rub down body, bonnet, mud-guards, and re-colour; repaint wheels and chassis; waterproof hood and curtains; leather dressing seats and backs; one coat medium rubbing varnish; rub down; two coats finishing body varnish.

Time - 8 days
Price - from £20

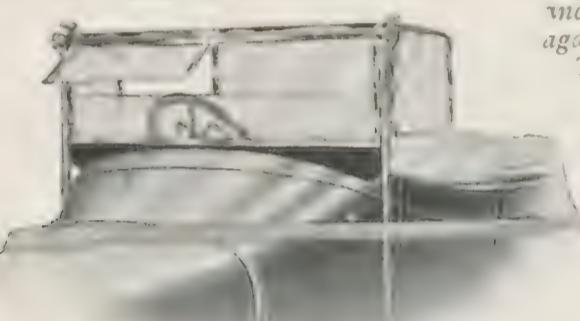


"DON'T SPOIL THE SHIP A HAT"

Even the best of "ready for the road" cars must have seven or eight accessories before it is completely—well, ready.



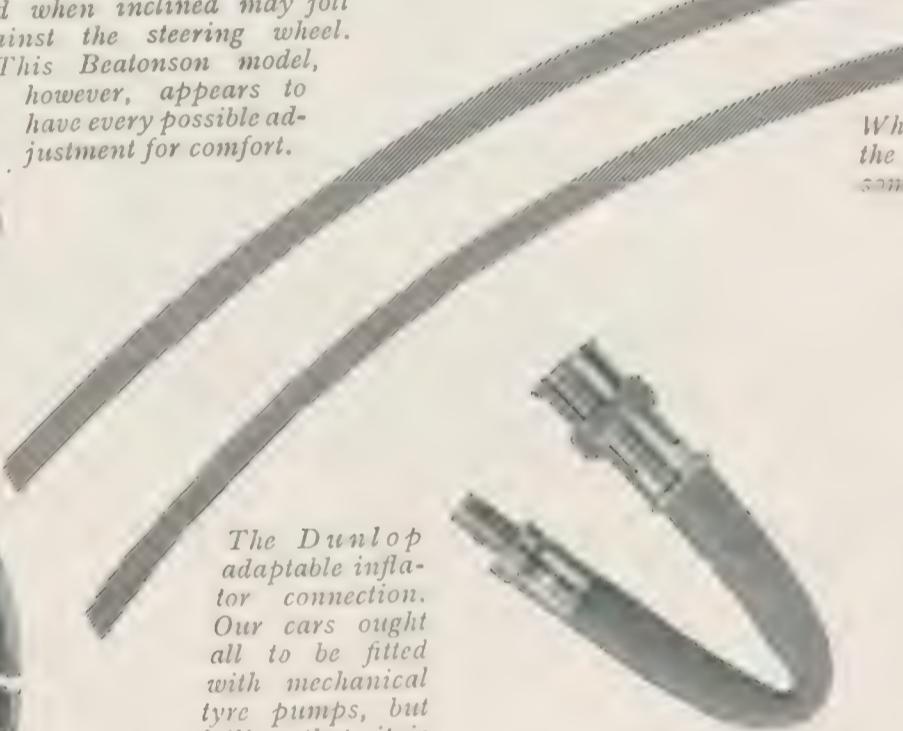
The Firmax buffer, which protects both the automobile to which it is fitted and persons or vehicles with which the car comes into collision.



Windscreens usually leave something to be desired—either they are too far away and cause a back draught, or too close, and when inclined may jolt against the steering wheel. This Beatonson model, however, appears to have every possible adjustment for comfort.



The Duco eight-day clock fits neatly on the dash, and is a thoroughly reliable timekeeper. The method of fitting and winding is particularly ingenious.



The Dunlop adaptable inflator connection. Our cars ought all to be fitted with mechanical tyre pumps, but failing that, it is a relief to possess a connection which does not leak and will fit any valve.



A car heater which operates through the vacuum induced by expulsion of the exhaust gases. Even though the radiator, which is

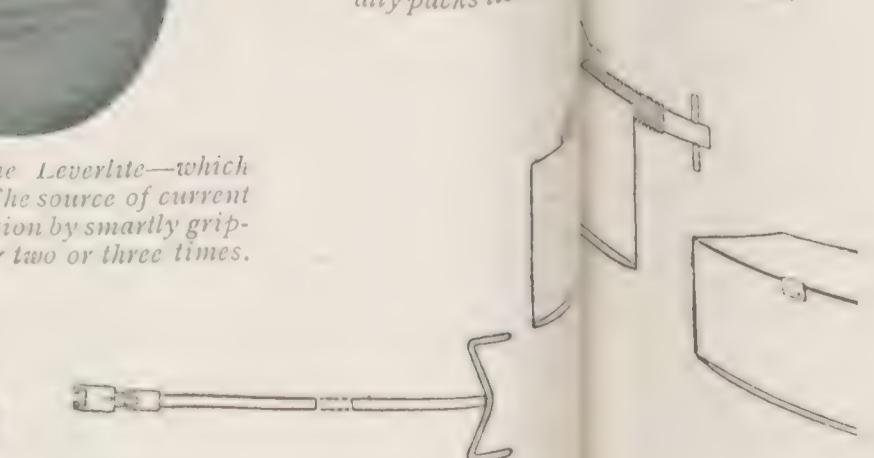
An electric hand-lamp—the Leverlite—which will never "run down." The source of current is a tiny generator set in motion by smartly gripping and releasing the lever two or three times.



What to do with the spare car which cannot rattle, and is the motor-owner. If it can't be sold, such as some form of holder is essential (sold by G. T. Rich, W.C.).

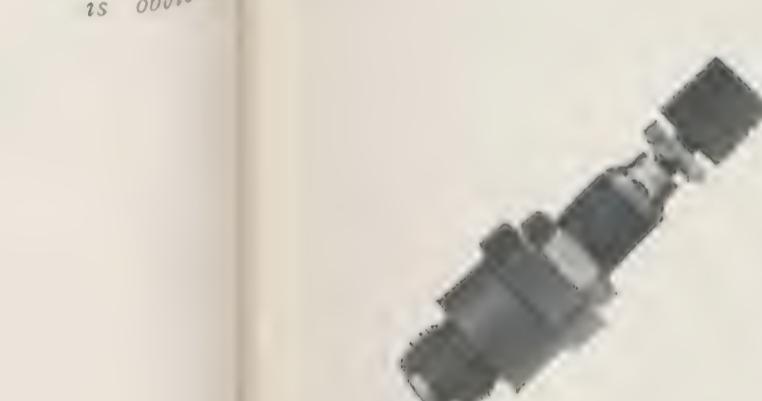
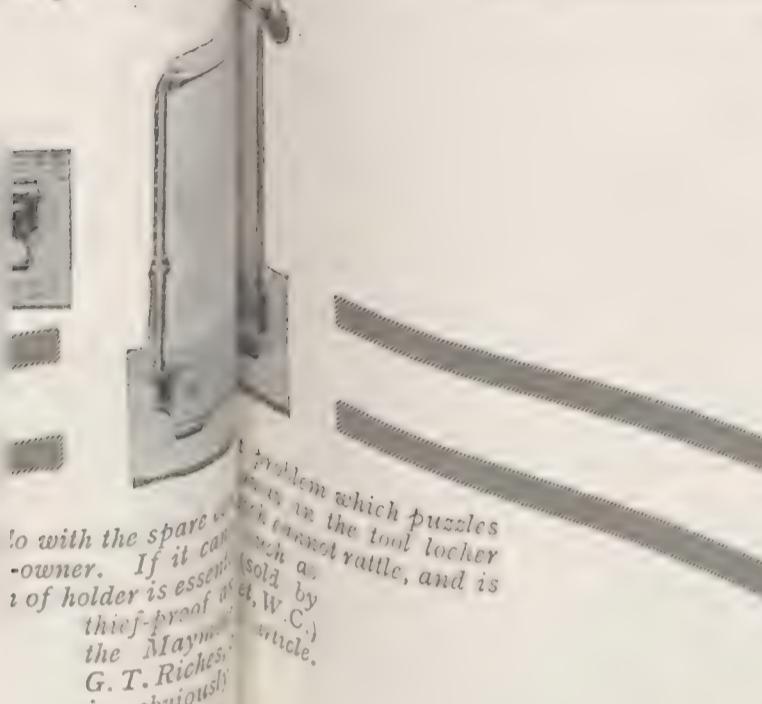


Jacks, like "Jack-in-the-Box," unfortunately, no means, many another of novelty, but of always satisfied shape when out shown has the easily storables principle upon of use, and the which it works roughly practical. There is a special universal handle; and the jack automatically packs itself away in its box.



SHIP A HA'PORTH OF TAR!"

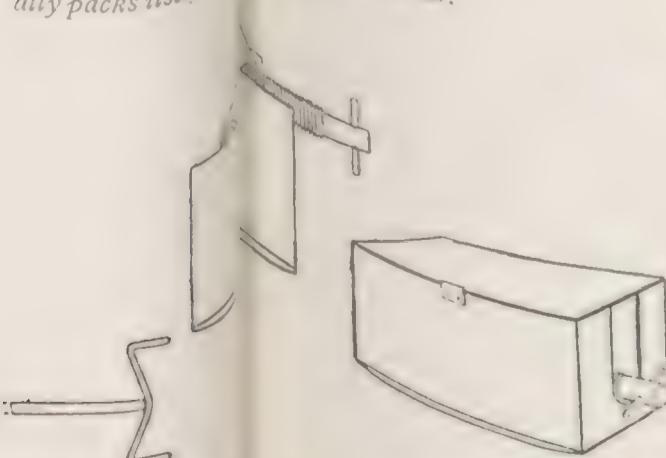
ady for the
ly—well,
must have several pounds spent upon
Here are some interesting "extras."



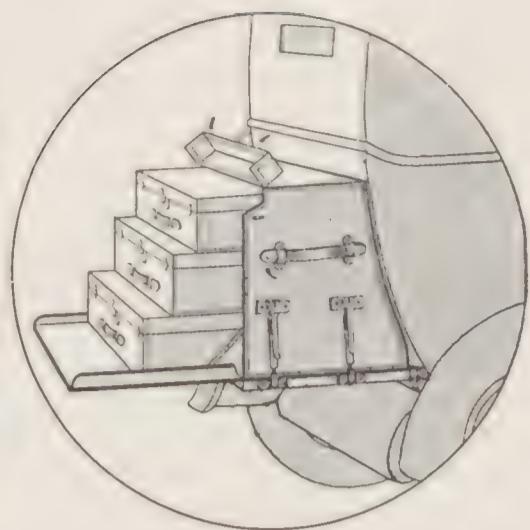
Compression taps, while necessary, are not particularly ornamental on the modern engine of otherwise clean design, and the idea of combining the tap with the sparking plug, as in the Lodge priming plug shown, is rather cute.



The latest Rudge-Whitworth detachable wheel is remarkably simple and safe, and the discs provided completely do away with the main disadvantage of the wire wheel—the difficulty of cleaning it.



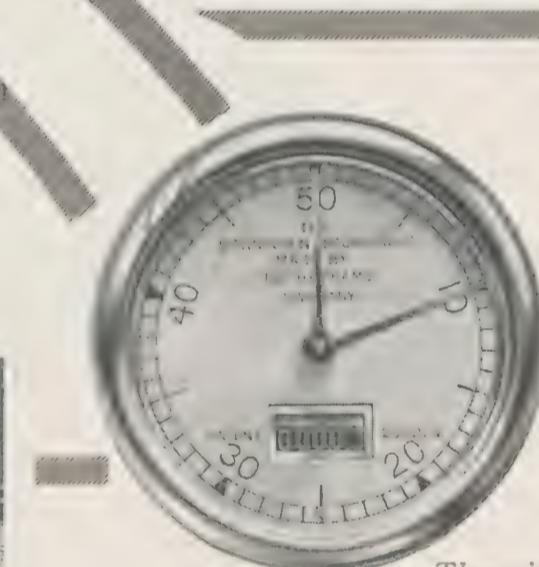
Serious tyre repairs are not usually done at home, but every motor-owner should have a Harvey Frost Baby vulcaniser in his garage. With intelligent use it will make his tyres last longer.



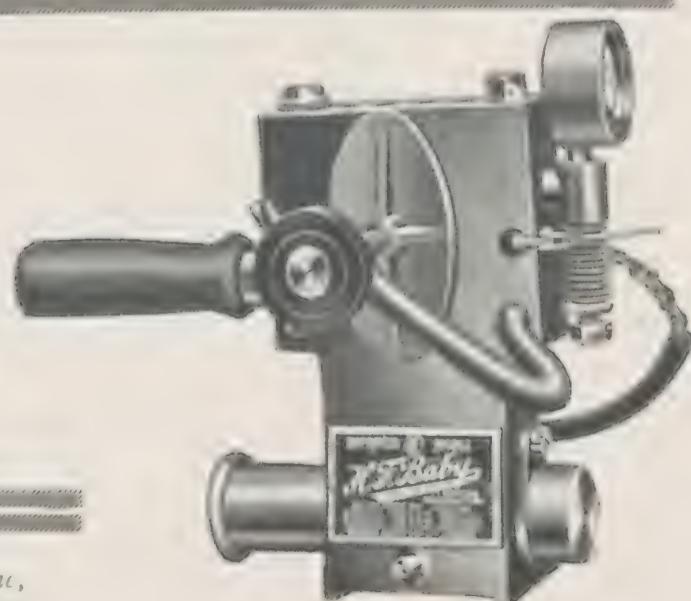
The luggage difficulty is not solved with the introduction of a grid. Straps break, and the ropes with which they are temporarily replaced are both unsightly and difficult to release. Finnigans, however, fit their trunks with a clip that merely snaps on to the grid and holds the trunk rigidly in place without the use of straps, and which can be locked.



Once the amateur breaks a water joint he is usually in for trouble. The Boyce "Cono" clip renders the job of re-making the joint quite simple. One just screws the tapered collar on to the hose until all leaks are stopped.



There is no lack of choice for the would-be purchaser of a speed indicator; but the Rotherham instrument shown possesses the dual advantage of legibility and neatness.



CARS WE HAVE TRIED:

The 40-50 h.p. Napier, the Austin "Twenty," and the 11·6 h.p. Standard.

THE term "the car with a history" may well be applied to the Napier. For one thing the firm who are responsible for it have been engineers for rather more than a century; for another, the Napier itself is an old friend, and a pioneer of the class that musters six cylinders.

Like many another, the Napier Company have seen fit to reduce the number of their models, and to-day they confine themselves to one. For this they have an authority that is antique—even classical. "Beware of the man of one book," is a saying with something like two thousand years to its credit, with the obvious meaning that to concentrate is the only way to excel. And this is the Napier programme. One model, and one only, is their practice to-day; hence the 40-50 six-cylinder of that name.

The car falls into what we might term the luxury class—if such a word is applicable to a carriage that nowadays has a decidedly utilitarian purpose. Certainly it is by no means commonplace; it is not meant to be; it has a reputation that is enviable, therefore, inferentially, the greater the praise due to a firm that is willing to stand or fall by one model.

Of that model we can but speak as we found it. At our disposal for a day, we chaperoned it over a varied route. The car was a limousine-landauet, a veritable town carriage, luxurious and spacious, yet readily adapted to people who, at times, like "Rude Boreas" to disport himself upon their faces. Into the heart of Surrey we bored. Along swift, straight stretches we flashed, rounding curves easily, where the firm's anti-rolling device proved itself to advantage, till we reached Leith Hill. Thence we turned northwards, lunched near Dorking, where we had a good meal but an indifferent lableless wine—a procedure that appears to be only too common since the war.

Box Hill we essayed next—from the Alpine side—with its sharp hairpins that struggle up the steep declivity. Hitherto the car had made a top-gear run, even through the West End traffic, and when we were informed that it could breast this hill on fourth we were frankly sceptical. Nevertheless it did it, save at the most acute bend, where the soft mud threatened disaster. Once round, however, we ran through the changes and, regaining "top," finished the ascent superbly.

There is little of incident to report. The car is particularly comfortable. Its equipment, whether merely mechanical or as appertains to the passengers, is really good. In the half-dozen 4 by 5 inch cylinders is ample power—brake tests, indeed, have yielded no less than 80 h.p. from a nominal 40.

The firm claim that they have secured no little weight reduction in this chassis, which is stated to turn the scales at 25 cwt. There is, however, no skimping; the wheel base is about 11½ feet, and pretty nearly 10 feet are avail-

able for the body. The carriage is certainly spacious and seats six comfortably.

No doubt a good deal of the engine's efficiency is due to its valves being overhead. Moreover, they are free from noisy action, once a fault of this type; indeed, there is a complete absence of periodicity in the engine, while "chattering" windows and squeaks in the wood-work, which so frequently mar a town carriage, are completely absent. The cylinders are grouped, forming a single aluminium casting, with steel liners; their heads



A 40-50 h.p. Napier landauet.

are detachable, and two independent ignition systems are employed.

The gear change control, placed between the driver and the front seat occupant, governs a four-speed gearbox, top being direct. We observed that the clutch, the firm's single plate sort, picks up very smoothly, and the gears engage noiselessly; also that the very efficient brakes can be readily adjusted. Points such as lubrication and carburation appeared to be completely satisfactory, and the cantilever springs that insulate the back portion of the car are commendable.

In a type of car such as the Napier there is no need to dwell on other details. One expects, and gets, light steering, distinction, and high quality. And, of course, there are equally an efficient lighting and starting system, lamps that are dependable, and the full equipment that people expect nowadays.

From the very smart brochure in which the Napier Company describe the car one learns quite a lot that is now forgotten respecting old-time motoring events. It is a long way back to the Gordon-Bennett days, but the Napier was there, and by no means without honour. Or if you scan the lengthy list of influential owners of this make you will notice that it is, so to speak, a pet of the aristocracy.

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THE AUSTIN "TWENTY."

The British car is not, as a rule, notably cheap, and therein the Austin "Twenty" differs radically from most of its sisters of these Isles. We should write it down, indeed, as the only car of home manufacture which compares at all on a price for performance basis with American vehicles. From this it must not be thought that the Austin is cheap in appearance or finish or really comparable at all with the more inexpensive American cars, except perhaps so far as completeness is concerned, for it has a typical British robustness which its rivals from across the water frequently lack. Taking everything into consideration, we rather fancy that the Austin "Twenty" is the cheapest car in the world to-day.

The car has a 95 mm. bore engine that is not only as powerful as its dimensions suggest, but that is exceptionally flexible and controllable. It is a top-speed car to all intents and purposes; but, having a four-speed gearbox, one is often tempted to drop to "third" when it is not absolutely essential

for the sake of the superior "get away." So far as hill-climbing is concerned it has to be a really severe gradient to require a descent from top, and we do not know anything on a main road within a wide radius of London that it could not eat on third. Dashwood Hill, on the Oxford Road, for instance, is both long and steep, but we took a full load of six persons up there recently on the Austin, and the speed did not drop below 25, although we made no effort to climb the hill in a specially meritorious fashion. Other shorter and steeper hills the car seemed to leap up—the result, maybe, of having that reserve of power which so often is useful. This, of course, may in some cases lead to excessive petrol consumption for the purpose in view, but the Austin ran regularly in the neighbourhood of 18 miles to the gallon over several hundred miles, which certainly is quite moderate for a car of this type.

The control of the car is everything that could be desired, the steering being light and, if anything, a trifle too sensitive. Clutch, brakes, accelerator, horn, head-lamp switches, dash lamp, speed indicator—all are placed in just the position and are of just the type that one would have chosen one's self—and what more can be said?

The suspension of the car is admirable; a road has to be very rough indeed to get a jolt past the insulation afforded by the springs, while the body is well designed for angle as well as appearance. So far as the latter point is concerned, perhaps appreciation of the car's appearance with its disappearing hood may be a matter of opinion, although we should describe it rather as a matter of use, but at least the advan-



The Austin "Twenty" touring car.



The 11·6 h.p. Standard.

tages of this method of hood disposal—as also the casings in at the rear of the spare wheels—are obvious.

The Americans undoubtedly have a genius for cheapness, but even they would be puzzled to beat the Austin; but as an English car it stands alone in its own class—one, incidentally, that is hard exactly to define, since other cars of the Austin's power and type are much more expensive, while those of its price—£695—are much less powerful and imposing.

To sum up, the Austin "Twenty" is a remarkable achievement, of which Britain may well be proud.

THE 11·6 H.P. STANDARD.

We sent our staff pessimist out on the new Standard since, as we have had occasion to remark before, he used not to be able to see any good at all in the modern small car, and we hoped to effect upon him a permanent cure. He is now completely sane. We are not surprised, because after reading his enthusiastic report on the car we had run ourselves on the Standard, and frankly, we were surprised. It was a

sufficiently dirty day to make one thoroughly appreciate the remarkably ample protection of the coupé-type hood and side panels, and with these fittings in position the warmth and general comfort of the car are really surprising. From the mere driver's point of view the comfort of the car leaves nothing to be desired, while those points such as body design, silence, suspension and so forth, which equally affect the passenger, are quite as good.

The feature which most impressed us—the control being so nearly perfect and troubleless as to be negligible—was undoubtedly the cosiness of the car when used as a closed vehicle. In spite of its modest power and price, it is essentially suited for shopping and theatre work, the more particularly as the framed mica side curtains open with the doors. A more elaborate, properly fitted coupé body could be fitted to the same chassis, naturally, but except in the matter of absolute luxury of equipment in the shape of

more expensive upholstery, flower vases and so forth, little would be gained. Among ordinary standard touring cars and especially of the smaller variety, this is one of the very few that are just as comfortable, easy and safe to drive in wet weather as in dry; a night as by day. Usually hood and screens are capable of improvement, but in these respects the Standard is absolutely as it should be.

Mechanically there is little to say, since the car performs all that is likely to be asked of it in either speed or climbing in a notably effortless fashion.



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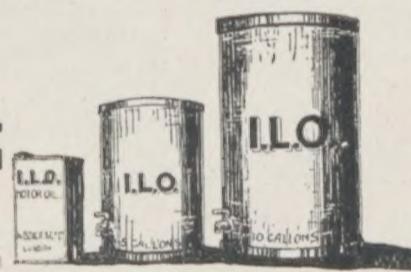
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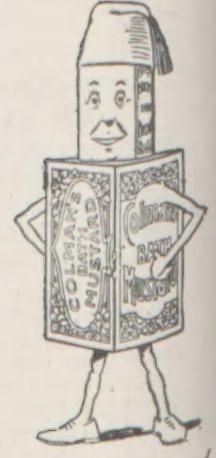
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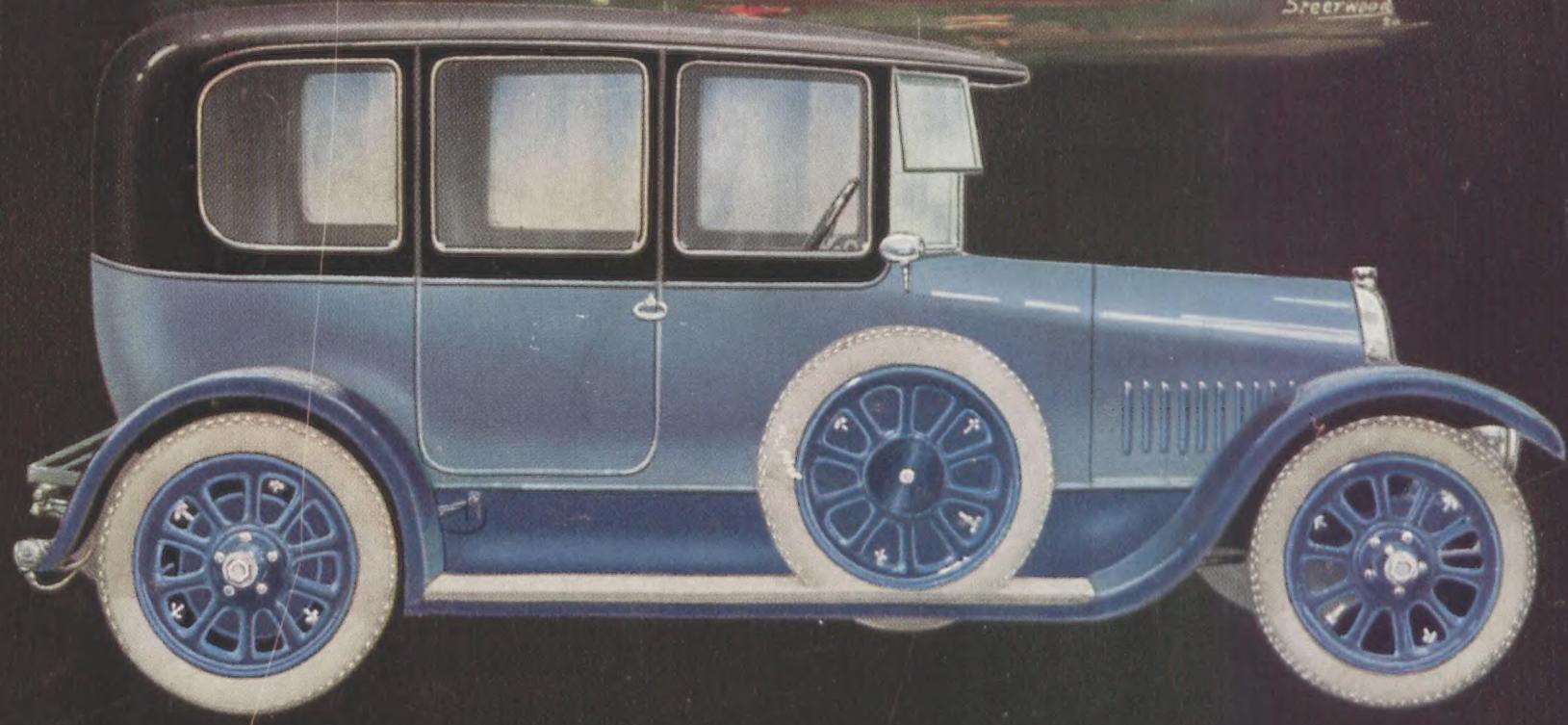
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